CDM Federal Programs Corporation

June 28, 1989

Rose Harvell
Project Officer
U.S. Environmental Protection Agency
401 M Street, Room 2834
Washington, D.C. 20460

PROJECT: EPA CONTRACT NO.: 68-01-7331

DOCUMENT NO.: T760-RO3-EP-DJWN-1

SUBJECT: Final Report for Work Assignment 760
RCRA Facility Assessment
Wearever Corporation (David Kahn, Incorporated)
Deer Lake, Pennsylvania
T760-RO3-FR-DJWQ-1

Dear Ms. Harvell:

Please find enclosed the Final RCRA Facility Assessment, for the Wearever Corporation (David Kahn, Incorporated), Deer Lake, Pennsylvania, as partial fulfillment of the reporting requirements for this work assignment.

If you have any comments regarding this submittal, please contact Jeff Ross of PRC Environmental Management Inc. at (312) 856-8700 within two weeks of the date of this letter.

Sincerely,

CDM Federal Programs Corporation

Bruce R. Pluta
TES III Regional Manager

BRP/dmh

Enclosure

cc: D. Jeff Barnett, EPA Primary and Regional Contact, RCRA Region III
Michael P. Riley, TES III Contracting Officer (letter only)
Donald Senovich, CDM Federal Programs Corporation Program Manager
Daniel Chow, PRC Environmental Management, Inc. (letter only)

FINAL RCRA FACILITY ASSESSMENT
WEAREVER CORPORATION
(DAVID KAHN, INCORPORATED)
DEER LAKE, PENNSYLVANIA

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, D.C. 20460

Work Assignment No.	:	760
EPA Region	:	III
Facility I.D. No.	:	PAD041250242
Contract No.	:	68-01-7331
CDM Federal Programs Corporation Document No.	:	T760-RO3-FR-DJWQ-1
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Date Prepared	:	June 28, 1989

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1.0 INTRODUCTION

This report presents the results of the preliminary review (PR), visual site inspection (VSI), and sampling visit (SV) of Wearever Corporations' David Kahn, Inc. (DKI) facility in Deer Lake, Pennsylvania. The PR, VSI, and SV are the three parts of the RCRA facility assessment PRC Environmental Management, Inc., is conducting under U.S. EPA contract No. 68-01-7331, Work Assignment Nos. 656 and 760.

1.1 PURPOSE OF THE RCRA FACILITY ASSESSMENT

A RCRA facility assessment (RFA) is the first step in a process for implementing the corrective action provisions of the 1984 RCRA Hazardous and Solid Waste Amendments (HSWA). Specifically, Sections 3004(u), 3004(v), and 3008(h) grant U.S. EPA authority to require corrective actions for releases of hazardous wastes and hazardous waste constituents from solid waste management units (SWMU) at RCRA facilities. An RFA generally includes three steps: preliminary review (PR), visual site inspection (VSI), and sampling visit (SV). The purpose of the RFA is to evaluate existing information and collect further information to:

- o Identify releases of hazardous waste at the facility.
- o Identify SWMUs and other areas of concern and evaluate them for releases of hazardous waste.
- o Determine the need for further actions and interim measures at the facility.
- o Screen from further investigation those SWMUs that do not pose a threat to human health or the environment.

1.2 PR AND VSI PROCEDURES

PRC Environmental Management, Inc., conducted a PR for the DKI facility in Deer Lake, Pennsylvania, according to the procedures described in EPA's final RCRA Facility Assessment Guidance Document. The PR included an analysis of information obtained from U.S. EPA and the Pennsylvania Department of Environmental Resources (PADER) offices. Files used during the PR were collected from U.S. EPA's Region 3 office and at PADER's Harrisburg and Wilkes Barre offices on April 8 and 9, 1987.

This review was supplemented by interviews with people knowledgeable of site operations and a VSI of the facility conducted on April 10, 1987. PRC submitted the results of the PR and VSI to U.S. EPA on June 23, 1987.

1.3 SAMPLING VISIT PROCEDURES AND OBJECTIVES

PRC conducted the DKI SV from July 7 through July 10, 1987, in accordance with the SV work plan submitted by PRC. The following persons participated in the SV:

Dan Gavaletz -- Wearever Corporation
Patrick McManus -- U.S. EPA
Tom Hahne -- PRC
Jean Desruisseaux -- PRC

The objective of the SV was to collect environmental samples for analyses that could (1) fill any remaining information gaps identified in the PR report, and (2) enable PRC to make determinations regarding hazardous waste releases from identified SWMUs and their potential impact on environmental targets.

A summary of sampling activities and deviations from the SV work plan were presented in a report submitted by PRC to U.S. EPA on September 30, 1987.

1.4 REPORT

This report describes the DKI facility and its operations (Section 2.0), the SWMUs and areas of concern (Section 3.0), migration pathways of known and suspected releases (Section 4.0), potential receptors of those releases (Section 5.0), and includes a summary of the PR, VSI, and SV (Section 6.0). The analytical results are included as appendices. Chain of Custody forms are available but not included in the report.

2.0 FACILITY DESCRIPTION

The DKI facility is located in West Brunswick Township, Schuylkill County, Pennsylvania, in a predominantly rural area near Deer Lake (see Figure 1). DKI produces pens, mechanical pencils, and desk accessories under the Wearever trademark. Facility processes include parts manufacturing, assembly, packaging, shipping, and sales. Plastics are formed by injection molding. Metal clips and pen parts are plated in a plating department. Metal tips are tooled in a small parts machines department. In addition, inks are formulated on-site and used to fill pen cartridges. Custom designed pens and desk top supplies receive special logos or emblems involving the use of paints, lacquers, and imprinting techniques (U.S. EPA, 1984; observations during VSI).

The following sections present background information on the facility, including a description of DKI's waste streams details on the site location the area geology and hydrogeology a description of the ground-water monitoring system and DKI's regulatory status.

2.1 BACKGROUND INFORMATION

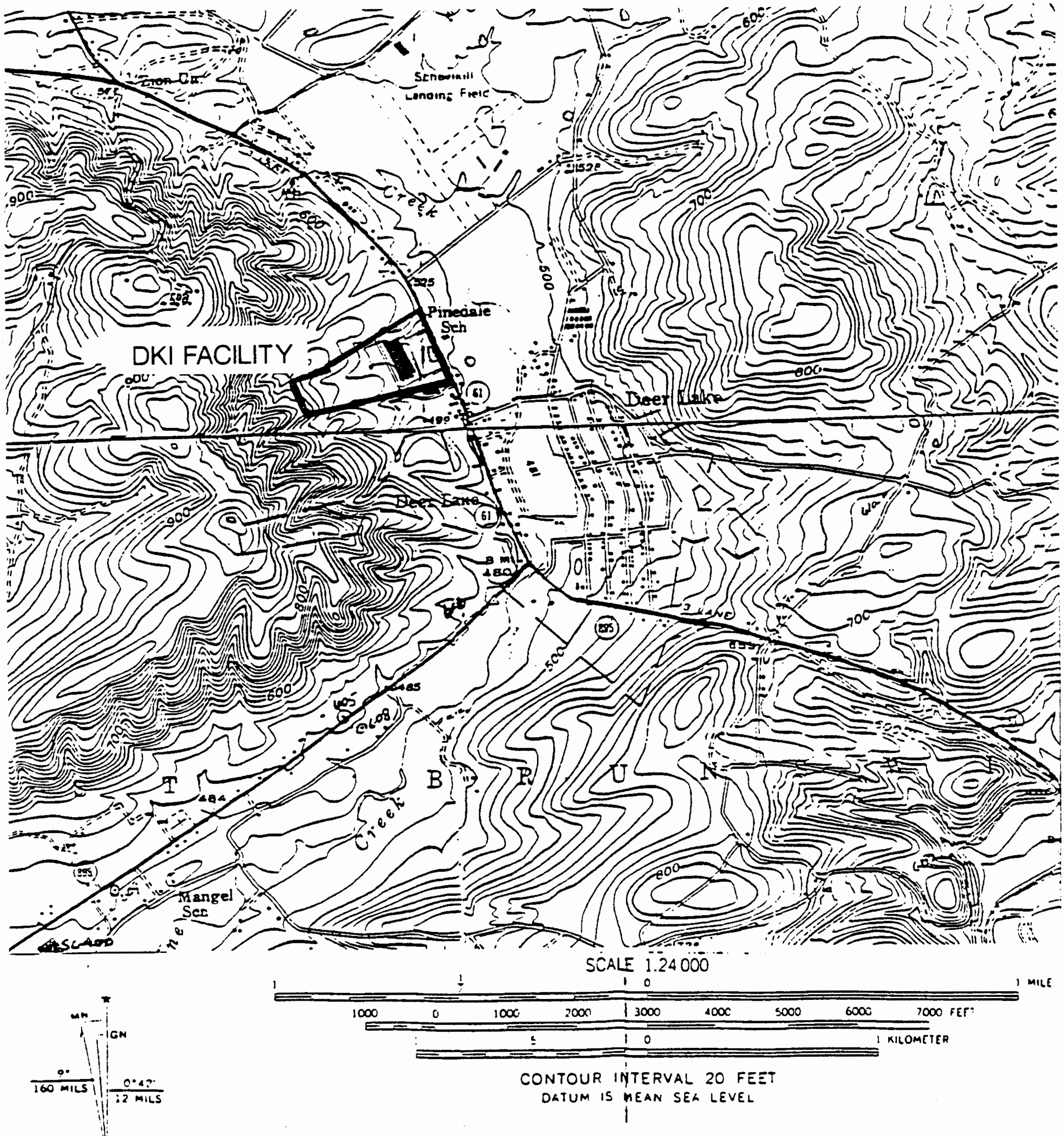
The DKI facility consists of a single-story building. The southern half is used for storing, packaging, and shipping products. The northern half is used for manufacturing and assembly and is subdivided into several departments. These departments include (1) ink formulation, (2) imprinting, (3) raw material storage, (4) plating, (5) assembly, (6) small parts machining, and (7) injection molding. In addition, the facility has several external storage buildings and units for wastewater treatment.

Other pertinent information on the DKI facility is shown below:

Facility Address	:	Wearever Corporation, David Kahn Inc. Deer Lake, Pennsylvania 17961-0245
Telephone	:	(717) 366-1011
RCRA Contact	:	Dan Gavaletz, Building and Grounds Maintenance
Facility I.D. Number	:	PAD 041250242

FIGURE 1

DKI FACILITY LOCATION MAP



Source: 1944, NE/4 and SE/4 Pottsville 15 Quadrangle, U.S. Geological Survey.

Type of Operation	:	Generator, less than 90-day drum storage, less than 90-day tank storage.
Notification	:	Generator, storage facility.

Until December 1983, DKI operated two surface impoundments for evaporating wastewaters and accumulated sludges (Cowan Associates, 1984a). In February 1983, EPA requested DKI to submit a Part B permit application for these impoundments. Instead of submitting a Part B application, DKI submitted a closure plan dated May 16, 1984 (PRC, 1986). This closure plan was revised on August 20, 1984, and an addendum to the closure plan was submitted on February 27, 1985. The closure plan as amended was approved by PADER on June 28, 1985 (PADER, 1985). DKI implemented closure of these two impoundments by removing their liquid and solid contents and transporting the contents to DuPont's Chamberworks in Deepwater, New Jersey (PRC, 1986). PADER inspected the surface impoundments on October 21, 1985, and confirmed that the closure plans were implemented correctly (PADER, 1985).

Ground-water contamination was first noted in DKI's on-site production well in 1983 (INTEX, 1985a). In 1984, EPA confirmed contamination in the on-site water supply well and also in a nearby private off-site water supply well. Contaminants detected were volatile organics: trichloroethylene, 1,1-dichloroethylene, 1,1,1-trichloroethane, and 1,1-dichloroethane (U.S. EPA, 1984). The facility initiated RCRA ground-water monitoring in 1984 (INTEX, 1985a) after EPA issued notices of violation in 1983 and 1984 (EPA, 1985a). Subsequently, the facility installed six monitoring wells and confirmed the presence of a ground-water contaminant plume.

In response to the closure of the surface impoundments and known ground-water contamination, DKI has been altering its manufacturing processes and waste handling procedures to limit waste generation and on-site waste storage and handling.

The primary wastes generated at the facility include:

- o Plating wastes -- The facility generated chrome plating wastes until converting to the "Zartan" process in 1981. Wastewaters from chrome plating were treated with sodium hypochlorite to reduce hexavalent chromium to the trivalent state and to oxidize cyanide. Sludges from this process were discharged to the surface impoundments; solids were discharged to the domestic wastewater treatment plant (Cowan Associates, 1984). Chrome plating sludges are considered F006 RCRA wastes. "Zartan" treatment involves tin plating; the alkaline and acid wastewaters contain nickel and tin (U.S. EPA, 1984). Since the SV was conducted, DKI has discontinued plating operations (Gavaletz, 1988).

- o Ink formulating wastes -- These wastes consist of solvent washes generated by rinsing utensils and equipment, and waste ink batches. The wastes were routed to the surface impoundments until December 1983. DKI has since reduced the amount of waste it generates by reusing solvents when formulating new batches of ink (Cowan Associates, 1984). The solvent washes are considered hazardous (K086), since they are generated from ink formulation processes that include pigments, dyes, and stabilizers containing chrome and lead.

- o Solvent wastes (F001) -- This waste stream primarily consists of spent 1,1,1-trichloroethane (1,1,1-TCA) generated during pen part cleaning operations. Currently, these wastes are stored in a 55-gallon drum within the small parts department. According to Mr. Gavaletz, the 1,1,1-TCA is manually poured over finished pen points to remove oils and then directly collected in a 55-gallon storage drum. These wastes have been reclaimed off-site since initial startup of the plant (Gavaletz, 1987).

DKI considers these waste streams (except "Zartan" process wastes) to be RCRA hazardous wastes. The facility also generates a number of wastes that are not considered RCRA-regulated (Gavaletz, 1987). These include waste oils from the small parts machines (also called waste pen tip oil), molding machine economizers, and injection molding units and press areas; waste accumulated from floor drains; and isopropyl alcohol from the lacquer department (Gavaletz, 1987).

The waste pen tip oil is collected in a bucket in the small parts machine area. One or two buckets per day are added to a 20,000-gallon oil fuel tank. Water soluble oil waste is generated in the stamping or press machines. The waste oil accumulates beneath a floor drain in a plastic drum set into a 6-foot-deep concrete sump. This waste is combined with the ink formulating waste stream.

2.2 SITE LOCATION

The DKI facility is located in West Brunswick Township, Schuylkill County, Pennsylvania, at a latitude of approximately 40° 37' 39" and a longitude of 76° 3' 52". The plant is situated immediately west of Route 61, approximately 1/4 mile north of the Borough of Deer Lake (Cowan Associates and INTEX, 1985). The site is located on the eastward slope of a hill, just above the floodplain of Pine Creek. The near-site area is sparsely populated, with both small commercial and residential land usage. The plant occupies the east-central portion of an 92-acre plot owned by DKI. The western portion of the property extends upslope into a wooded area.

2.3 AREA SOILS AND GEOLOGY

The site rests on disturbed soils, classified by the Soil Conservation Service (SCS) as Urban land-Adults complex (SCS, 1982). From SCS maps, these soils appear to be modified from Berks shaly silt loams. The Berks assemblage is characterized as well-drained soils on the sides of hills, reaching depths of several feet and resting on rippable shaly bedrock at shallow depths (SCS, 1982). Site runoff drains eastward to Pine Creek, which flows southward to the Schuylkill River.

The Deer Creek area is within the Appalachian Mountain Section of Pennsylvania (PADER, 1983). Near surface bedrock in the area consists of undifferentiated shales and sandstones of the Mahantango Formation of Middle Devonian age; these units overlie the Marcellus shale and the Selinsgrove limestone, also of Middle Devonian age (Wood, 1973). Near-site bedrock has been structurally deformed. The site lies within a large synclinorium that plunges to the west-southwest. This synclinorium has been locally modified by low-amplitude folding, resulting in a series of closely spaced anticlinal-synclinal pairs (Wood, 1973).

2.4 AREA HYDROGEOLOGY

The deepest well at the site is the production well, which reaches a depth of 400 feet. According to International Exploration, Inc. (INTEX), this well is in the same type of shale for its entire depth (INTEX, 1985a). This would indicate that shales of the Mancellus shale or Mahantango Formation above the Selinsgrove limestone attain a thickness of at least 400 feet in the site area.

INTEX believes that at least two distinct aquifers underlie the site: an upper unconfined unit in weathered shale and a deeper confined aquifer in competent shale bedrock. The upper unit is located at depths of 16 to 20 feet, and the lower unit is at deeper depths in several zones of fractured rock (INTEX, 1985a).

INTEX conducted a pumping test of the DKI production well in 1985 (INTEX, 1985b). INTEX monitored drawdown at six of the monitoring wells while pumping from the production well. Several conclusions were reached as a result of the pumping test:

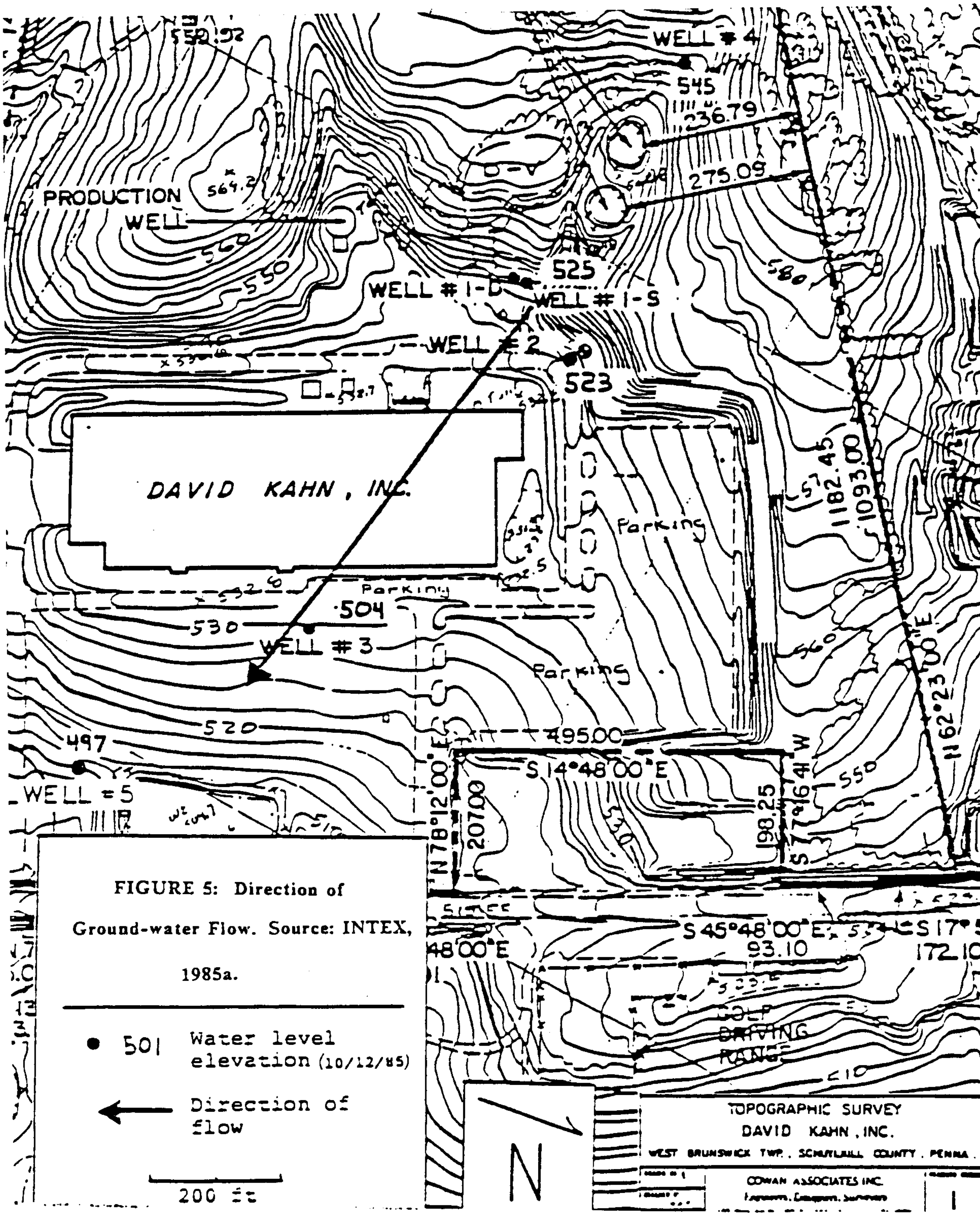
- o The upper and lower aquifer units are interconnected either by (1) leakage through the production well from the upper to lower units, or (2) direct interconnection of the two units.
- o Flow through the upper unit may have some fracture or joint control due to an abnormally high drawdown in Well 5 during the pumping of the production well.
- o For the lower unit, transmissivity was estimated at 1,885 gal/day/ft using the Jacobs-Hantush straight line method.
- o For the upper unit, transmissivity was calculated at 9,994 gal/day/ft using drawdown data for Well 5; INTEX considered this value to be invalid because earlier pumping on Well 5 indicated a transmissivity value of 152 gal/day/ft.

Using this information, INTEX calculated ground-water velocity at 3.45 to 6.91 feet per day for the upper aquifer; these values were obtained by using a transmissivity value of 152 gallons per foot per day and using storage coefficient values for unconfined and confined aquifers (INTEX, 1985a). It is uncertain how accurate the ground-water velocity values are, since the calculated transmissivities varied by nearly two orders of magnitude. INTEX also identified an east-southeasterly direction of ground-water flow in the upper aquifer (see Figure 2). No information was available regarding the flow direction in the lower unit.

During the SV, a ground water spring or seep was found east of Route 61. The seep discharges into Pine Creek. A complete description of this area and sampling results are discussed in Section 5.1.

FIGURE 2

LOCATION OF MONITORING WELLS AND DIRECTION OF GROUND-WATER FLOW



Source: INTEX, 1985a.

2.5 GROUND-WATER MONITORING SYSTEM

DKI has six monitoring wells and one production well at the site (see Figure 3). Five monitoring wells (1-D, 1-S, 2, 3, and 4) were installed by INTEX on June 27 and 28, 1985 (Cowan Associates and INTEX, 1985). A sixth monitoring well (No. 5) was installed by INTEX on September 24, 1985 (INTEX, 1985c). The production well has provided water for on-site use (25% public use, 75% fire supply) since the facility began operation (Gavaletz, 1987).

The monitoring wells are all constructed in one of three manners. Well 1-S is constructed with a 4-inch inner diameter (ID), inner-slotted PVC casing. This casing is in a protective outer steel casing with a locking cap and set within cement grout 3 feet deep. The slotted PVC is apparently set within the open borehole (Cowan Associates and INTEX, 1985). Wells 1-D, 2, 3, and 4 are constructed with a protective steel casing with locking cap, and set within cement grout above an open borehole (Cowan Associates and INTEX, 1985). Well 5 is constructed with a steel casing set to 40 feet within a sand and gravel pack. Below the sand and gravel pack the borehole is open, and above the sand and gravel pack the borehole is grouted with cement (INTEX, 1985c). Well depths and screened intervals are shown in Table 1.

DKI's wells are not constructed in accordance with EPA criteria for ground-water monitoring. The wells are primarily constructed with steel casings. They are not screened over discrete intervals, nor do they possess filter packs. In certain instances, well integrity is questionable. For instance, Well 1-S has a slotted well casing within the grouted portion of the annulus, and Well 5 has a sand pack placed around the external portion of the nonslotted inner steel casing. In all wells except 1-S, the production well, and 5, wells are constructed in open holes, some of which are open in a portion of the aquifer that INTEX describes as highly weathered, crumbly, and incompetent (INTEX, 1985c).

TABLE 1

WELL DEPTHS AND SCREENED INTERVALS

Well	Depth (feet)	Interval Screened or Open to Formation (feet)
1-S	22	6.0 to 22.0 (screened)
1-D	60.7	19.7 to 60.7 (open)
2	65	7.0 to 61.0 (open)
3	74	17.2 to 70.0 (open)
4	42	6.0 to 40.4 (open)
5	63	40.0 to 60.0 (open)
Production	400	43.0 to 400 (open)

Sources: INTEX, 1985b; Cowan Associates, 1984; INTEX, 1985c.

2.6 PERMIT STATUS

The following sections discuss DKI's RCRA regulatory status and its NPDES and state permits.

2.6.1 RCRA

DKI is an active interim status facility. The facility submitted its RCRA Part A permit application on November 19, 1980. This application indicated that the facility operates storage tanks, disposal surface impoundments, and treatment tanks (DKI, 1980). This Part A application was modified in 1984 to change disposal surface impoundments to storage surface impoundments, delete tank treatment, and add container storage (DKI, 1984). DKI again modified its application in 1985 to delete the disposal surface impoundment (DKI, 1985).

In lieu of submitting a RCRA Part B permit application as a TSD facility, DKI elected to close its surface impoundments. PADER approved the closure of these units on June 28, 1985 (PADER, 1985), and DKI certified closure on December 11, 1985 (Cowan Associates, 1985). EPA issued a consent agreement and consent order (CACO) on October 30, 1985, that fined DKI for violations of RCRA ground-water monitoring requirements relating to these surface impoundments (EPA, 1985b).

2.6.2 NPDES

On October 1, 1981, PADER issued an NPDES Permit, No. PA0012149, to DKI. The permit authorized the facility to discharge treated dilute waste and domestic sewage effluent. On October 1, 1986, PADER renewed DKI's NPDES permit. The current permit includes the following discharge parameters and average permit values or permit ranges:

o	Total suspended solids	30 mg/liter (average)
o	BOD5	30 mg/liter (average)
o	Fecal coliform	200 per 100 milliliter (average)
o	Flow	3000 gallons/day (average)
o	pH	6.0 to 9.0 (range)
o	Oil and grease	15 mg/liter (average)
o	Chlorine residual	Limit not specified

2.6.3 Other Permits

In addition to holding the NPDES permit, DKI has been issued two other permits by the State of Pennsylvania. These permits are:

- Sewage Permit No. 666S051, dated July 3, 1967
- Public Water Supplier No. 3540446, dated July 2, 1980

3.0 SOLID WASTE MANAGEMENT UNITS

PRC identified 13 solid waste management units (SWMU) at the DKI facility. Nine units that PRC previously discussed in the PR include:

- o Disposal surface impoundments (closed)
- o Underground storage tank area
- o Waste ink sump
- o Wastewater treatment plant
- o Wastewater effluent lagoon
- o Barrel storage yard
- o Oil filtration pit
- o Household trash dump
- o Building material dump

Four additional units, which are described below, include:

- o Underground fuel tank
- o Water soluble oil waste sump
- o Waste solvent accumulation drum
- o Silkscreen wash accumulation drum

The following sections describe each unit and its status, the waste type handled by and waste management practices for each unit, and any results from the SV. Figure 3 shows the location of each of the SWMUs. Appendix B contains the photographs of the SWMUs.

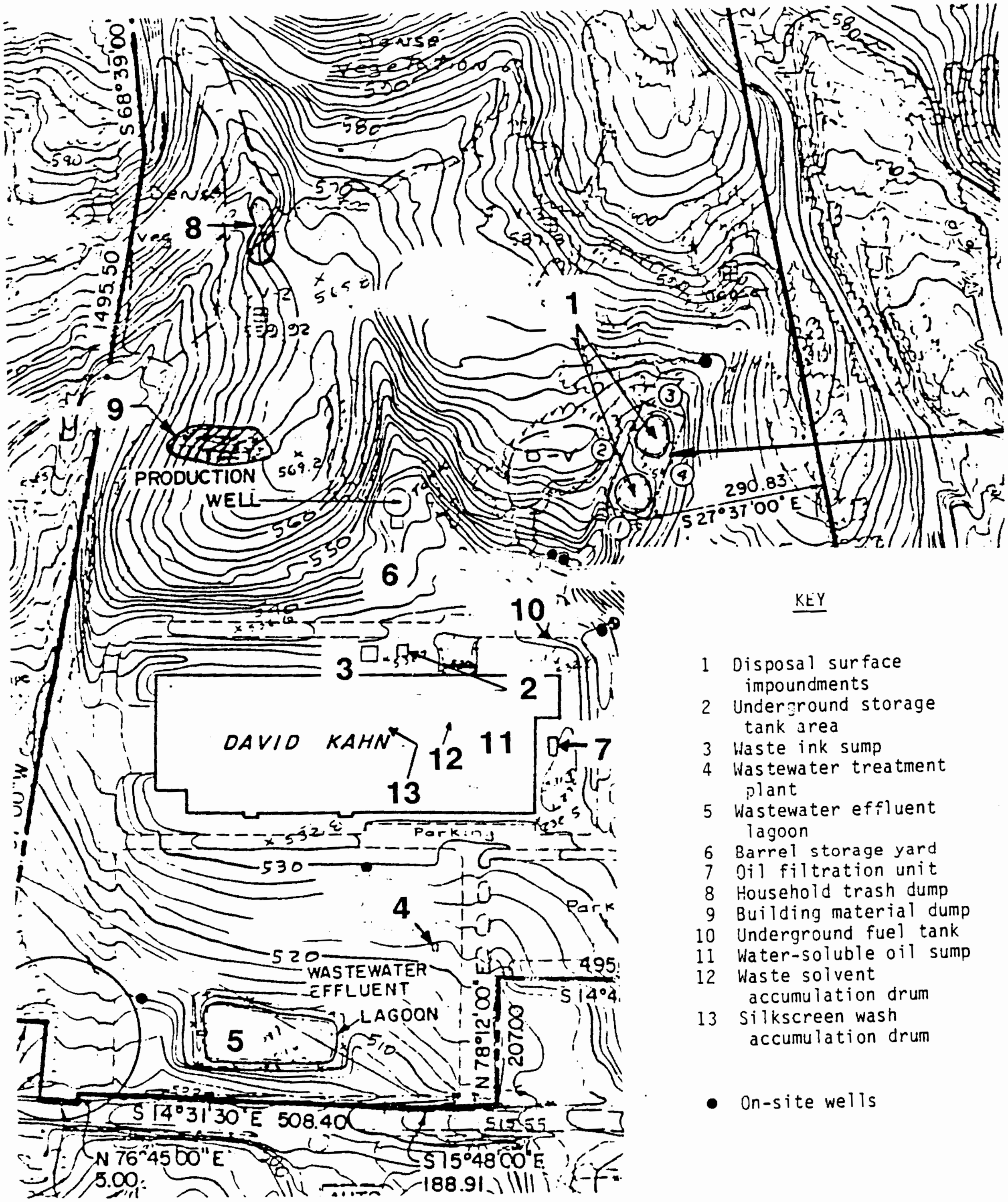
3.1 DISPOSAL SURFACE IMPOUNDMENTS

Description:

DKI operated two adjacent surface impoundments northwest of the plant. Because of their close proximity the impoundments are treated as one SWMU. Impoundment 1 was constructed in 1967; Impoundment 2 was constructed in 1980 to the east of the first impoundment to contain overflow and accumulated sludge from it (Cowan Associates, 1984). Both impoundments were originally constructed with a 6-inch base of steel-reinforced concrete; Impoundment 1 measured 75 feet in diameter by 6 feet deep, and Impoundment 2 measured 70 feet in diameter by 4.8 feet deep (PRC, 1986).

FIGURE 3

SWMU LOCATION MAP



KEY

1 Disposal surface impoundments
2 Underground storage tank area
3 Waste ink sump
4 Wastewater treatment plant
5 Wastewater effluent lagoon
6 Barrel storage yard
7 Oil filtration unit
8 Household trash dump
9 Building material dump
10 Underground fuel tank
11 Water-soluble oil sump
12 Waste solvent accumulation drum
13 Silkscreen wash accumulation drum

● On-site wells

Status:

The surface impoundments were certified closed in 1985 (Cowan Associates, 1985). On October 25, 1984, all wastewater and sludge stored in the impoundments were removed by Delaware Container to Dupont's Chamberworks facility (PRC, 1986). At the time of closure, cracks were noted in the base of the impoundments which may have indicated a release to the ground-water (PRC, 1986). The lagoon bases were covered with a 15-mil PVC liner (Cowan Associates, 1984), covered with soil, graded, and seeded (PADER, 1985a).

Waste type:

The following materials were stored in the two surface impoundments:

- Wastewater sludges (F006) from the plant's chrome plating system until 1981 (Cowan Associates, 1984)
- Waste solvents and solvent washes (K086) from the ink formulation department until December 1983 (Cowan Associates, 1984)
- Silkscreen solvent washes

Table 2 shows the analytical results of sludge and liquid samples collected from the surface impoundments.

Waste Management:

DKI operated the surface impoundments to evaporate wastewater and accumulate sludges. DKI did not dispose of any material from the impoundments until they were closed (Gavaletz, 1988).

SV Results:

PRC did not collect any samples related to the surface impoundments.

3.2 UNDERGROUND STORAGE TANK AREA

Description:

DKI has four 5,000-gallon underground storage tanks located within an external building (see Photo 1) just west of the main plant building.

TABLE 2

David Kahn, Inc.
Disposal Surface Impoundments
Analysis of Samples Collected April 9, 1984

	IMPOUNDMENT 1		IMPOUNDMENT 2	
	Sludge[a] (ppb)	Supernatant[b] (ppb)	Sludge[a] (ppb)	Supernatant[b] (ppb)
Carbon Tetrachloride	< 5	< 0.5	< 0.5	< 0.5
Chlorobenzene	< 10	< 1	< 1	< 1
1,1-Dichloroethane	4800	< 5.5	0.9	0.8
Chloroform	< 5	< 0.5	< 0.5	< 0.5
Ethyl Benzene	18	< 1	< 1	< 1
Methyl Chloride	< 50	< 5	< 5	< 5
Methylene Chloride	< 5	< 5	< 0.5	< 0.5
Toluene	220	< 1	< 1	< 1
Trichloroethylene	580	< 3.4	< 0.5	< 0.5
1,1,1-Trichloroethane	< 5	0.6	< 0.5	< 0.5
	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Phenol	21	2.4	9	1.5
Cyanide	23	0.0	0.15	0.0
Cadmium	0.276	0.001	0.222	0.001
Lead	28.6	0.008	23.8	0.008
Arsenic	0.15	0.001	0.10	0.001
Selenium	0.54	0.001	0.26	0.001
Chromium total	448	0.015	204	0.006
Copper	158	0.005	90.4	0.005
Nickel	2450	0.646	2000	0.313
Zinc	37.3	0.024	33.3	0.017
Total suspended solids	30300	2.	18940	3
pH	5.3	6.5	6.1	6.6

Source: Cowan, 1984

Notes:
a Sludge samples collected by dredge sampler and composited
b Supernatant samples collected by dipper from top 6 inches

Status:

According to Dan Gavaletz of DKI, only two of the tanks were active at the time of the SV and both are used for temporary (less than 90 day) storage of wastes (Gavaletz, 1987).

Waste Type:

One tank is used for accumulating ink washes. This tank was part of the K086 waste stream, and also receives water soluble oil waste from the water soluble oil sump. The other tank is used for accumulating plating wastes from the "Zartan" plating process. Dan Gavaletz stated the "Zartan" plating process is no longer operative. Until 1981, these tanks also received chrome plating wastes (F006) and solvent washwaters containing chrome and lead (K086).

Waste Management:

Ink wash waste from the ink department and water soluble oil waste collect in the ink department pit sump and are pumped directly to one of the storage tanks; wastes from the plating department were routed from in-floor collection troughs to the "Zartan" tank (Gavaletz, 1987). These wastes are then shipped off-site within 90 days by Delaware Container to the DuPont facility in Deepwater, New Jersey (Gavaletz, 1987). Until 1981, tanks were used to batch treat K086 wastewaters (Cowan Associates, 1984).

SV Results:

PRC did not collect any samples related to the underground storage tank area.

3.3 WASTE INK SUMP

Description:

The waste ink sump is constructed of concrete and has a capacity of approximately 150 gallons. It is located in the main plant building directly east of the underground storage tank area.

Status:

Active.

Waste type:

The waste ink sump collects ink wash waste and water-soluble oil waste.

Waste Management:

Ink wash waste from the ink department and water-soluble oil waste collect in the sump and are pumped directly to one of the storage tanks.

SV Results:

PRC did not collect any samples related to the waste ink sump.

3.4 WASTEWATER TREATMENT PLANT

Description:

The wastewater treatment plant (WWTP) is an extended aeration package plant constructed of steel (see Photo 2), and designed to handle 21,000 gallons of domestic sewage per day (DKI, 1985). The location of this unit is shown on Figure 4.

Status:

Active since about 1965.

Waste Type:

This unit receives domestic waste from the plant.

Waste Management:

The WWTP treats the domestic waste and discharges the effluent to the wastewater effluent lagoon.

SV Results:

PRC did not collect any samples related to the wastewater treatment plant.

3.5 WASTEWATER EFFLUENT LAGOON

Description:

The wastewater effluent lagoon is roughly rectangular in shape, measuring 216 feet by 72 feet, with a 5-foot water depth (see Photo 3). The lagoon has an earthen basin with a concrete effluent discharge structure (DKI, 1985).

Status:

Active since about 1965.

Waste Type:

The lagoon receives effluent from the domestic WWTP. Prior to 1981, the effluent lagoon also received supernatant from the underground tanks used to treat K086 waste and supernatant from the oil filtration unit (Cowan Associates, 1984).

Waste Management:

This lagoon is used as a final settling and aeration basin. Final effluent is treated with chlorine and released through an NPDES outfall to Pine Creek (DKI, 1985).

SV Results:

PRC collected one surface water and three sediment samples from the wastewater effluent lagoon. Two sediment samples, including a duplicate, were collected for EP toxicity analysis. Each sample was composited from four locations in the north side of the lagoon. Specific locations were noted in the logbook. The third sediment sample was a composite of sediment from three locations in the south side of the lagoon. This sample was analyzed for total metals and volatile organic compounds. The results are summarized in Table 3. The surface water sample was collected from the south end of the lagoon near a culvert. A duplicate was collected for cyanide; however, the cyanide results were unreliable (see Appendix A). Total metals and volatile organic results for this water sample are also summarized in Table 3. The results show that the lagoon sediments contain elevated concentrations of cobalt, copper, lead, and 1,1,1-TCA. Although both acetone and toluene were also found, within of

TABLE 3

SV ANALYTICAL RESULTS FOR THE WASTEWATER EFFLUENT LAGOON

Inorganics	Sediment (mg/kg)		Surface Water (ug/L)	
Arsenic	7.9		ND	
Barium	265		69	B
Cadmium	12		ND	
Chromium	41	L	ND	
Cobalt	62		ND	
Copper	2390	L	ND	
Lead	164	L	9.6	B
Mercury	1.0		ND	
	(ug/kg)		(ug/L)	
Organics				
Methylene Chloride	262	B	ND	
Acetone	828		ND	
2-Butanone	669	J	ND	
1,1,1-TCA	1,172		ND	
Toluene	41		ND	

Notes:

B -- Not detected substantially above the level reported in laboratory or field.

L -- Analyte present; reported value may be biased low; actual value is expected to be higher.

J -- Analyte present; reported value may not be accurate or precise.

ND -- Not detected

these compounds have been previously detected in groundwater sampling. PRC has not received EP toxicity analytical results as of this date.

3.6 BARREL STORAGE YARD

Description:

The barrel storage yard is paved with asphalt and is level with the ground surface. It is surrounded by a chain link fence. The unit measures approximately 60 by 60 feet (estimated from VSI; see Photo 4).

Status:

Active since about 1965.

Waste Type:

No information concerning this unit was found during the PR. According to Mr. Gavaletz, the unit is used to store empty alcohol and lacquer drums.

Waste Management:

PRC did not find information concerning the management of the empty barrels.

SV Results:

The investigation at the empty barrel storage yard consisted of 13 test borings taken by PRC personnel around the perimeter of the yard. These borings did not indicate any obvious evidence of contamination; no discoloration of soils or significant (above background) photoionization unit readings were detected. Based on the findings of the VSI and SV, PRC believes the possibility for release from this unit is low.

3.7 OIL FILTRATION UNIT

Description:

The oil filtration unit is a rectangular, concrete in-ground pit, measuring approximately 20 by 8 feet and separated into two portions (see Photo 5); the western portion is approximately 15 feet deep and the eastern portion is approximately 6 feet deep (Gavaletz, 1987).

Status:

Active since about 1965, although Dan Gavaletz recently stated that the unit has not been used since 1986 and will be cleaned out (Gavaletz, 1988).

Waste Type:

The unit was used approximately once a year to filter oil and water overflow from the economizer. Until 1986, the unit was also used to filter cooling water from the molding department dyes (Gavaletz, 1987).

Waste Management:

The unit was used as a gravity sand trap. Material was added at the west end. The excess flowed to the east side where a layered sand and gravel medium was used to filter material before discharge to the effluent lagoon (Gavaletz 1987, DKI, 1985). The oil-saturated medium was last removed from the unit in 1985 (DKI, 1985).

SV Results:

PRC collected one liquid and one solid sample from the oil filtration unit. The solid sample consisted of the coarse sand filter pack and was collected to a depth of 6 inches. Both samples were analyzed for VOCs and total metals. The results are summarized in Table 4. The solid sample contained low concentrations of some metals, and the liquid sample contained low concentrations of some volatile organics. Since the unit was not in operations during the SV, the results may not be indicative of the wastes present during the units operation. However, based on the units design and previous infrequent use, PRC believes the potential for release of hazardous substances has been low.

3.8 HOUSEHOLD TRASH DUMP

Description:

This unit is located approximately 1,000 feet south- southwest of the DKI plant. The exact dimensions of this unit were not found during the PR. During the VSI and SV, the area was observed to be located on a slope with little cover. Unburied debris and trash were exposed at the surface (see Photo 6). It was not determined whether any burried wastes exist.

TABLE 4

SV ANALYTICAL RESULTS FOR THE OIL FILTRATION UNIT

	Liquid (ug/L)	Solid (mg/kg)
Inorganics		
Arsenic	ND	1.6 L
Barium	24 B	11 B
Cadmium	ND	ND
Chromium	ND	3.4 L
Cobalt	ND	6.6
Copper	ND	102 L
Lead	16 B	41 L
Mercury	ND	ND
	(ug/L)	(ug/L)
Organics		
Methylene Chloride	ND	ND
Acetone	22 J	7 J
2-Butanone	ND	ND
1,1,1-TCA	13	ND
Toluene	ND	ND
1,1,-DCA	12	ND
Styrene	17	ND

Notes:

B - Not detected substantially above the level reported in laboratory or field blanks
J - Analyte present; reported value may not be accurate or precise
L - Analyte present; reported value may be biased low; actual value is expected to be higher
UJ - Not detected, quantitation limit may be inaccurate
ND - Not detected

Status:

Inactive.

Waste Type:

According to DKI, the abandoned trash dump was inherited from the previous owner. This unit is thought to contain household trash (DKI, 1985).

Waste Management:

None.

SV Results:

A soil sample was not obtained in this area due to the bedrock encountered near the surface. There was also no evidence of disturbed soils or soil discoloration. The potential for release from this area is not known, since the areal extent of the trash dump could not be evaluated.

3.9 BUILDING MATERIAL DUMP

Description:

This dump is reportedly located southwest of DKI's plant (see Figure 3). No specific design or size information was found for this unit during the PR. The general area was inspected during the VSI and SV; no exposed debris was observed, and the area supported a good vegetative cover.

Status:

Inactive.

Waste Type:

The dump received building materials from the original plant construction (DKI, 1985).

Waste Management:

None.

SV Results:

PRC inspected the areas where the discarded building material was supposed to be buried. Exposed debris was not found and the soils were very thin. In locations where the few inches of existing soil was removed by hand auger, only background concentrations on the photoionization instrument were observed. A sample was not taken from this area since the burial site was not found and no evidence of contamination existed. The release potential of the building material dump will not be known until the extent and natural of the buried material is understood.

3.10 UNDERGROUND FUEL TANK

Description:

DKI operates a 20,000-gallon underground fuel oil tank located approximately 100 feet from the northwest corner of the plant. The tank pump, filling port, and standpipe are located aboveground (see Photo 7). The ground surface around the standpipe is dark, oil stained, and devoid of vegetation.

Status:

The facility is currently using the underground fuel tank.

Waste Type:

The underground fuel tank contains fuel oil of undetermined composition and waste pen tip oil collected from the small parts machine area.

Waste Management:

One to two buckets of waste pen tip oil are added to the fuel tank each day. PRC personnel did not observe this activity during the SV and did not obtain a sample of the waste pen tip oil. The oil from this fuel tank is burned in the facility's boiler.

SV Results:

PRC collected a soil sample from the stained area around the standpipe. The affected area was approximately 3 to 4 feet in diameter. The soil was sampled to a depth of approximately 2 inches. The HNu detected concentrations of approximately 5 ppm in the headspace above the stained soils. The analytical results are presented in Appendix A. The sample exhibited elevated concentrations of lead (2,960 ppm) and 1,1,1-TCA (814 ppm). The release and potential environmental targets are discussed further in Sections 4.0 and 5.0.

3.11 WATER-SOLUBLE OIL WASTE SUMP

Description:

The oil waste sump is constructed of concrete and measures 4 feet by 4 feet by 6 feet. It is located beneath a floor drain in the press area. The waste is collected in a plastic drum that sits in the sump.

Status:

Use of this sump was discontinued sometime after the SV (Gavaletz, 1988).

Waste Type:

The drum collects water-soluble oil waste from the light presses, stamping machines, and floor wash runoff. DKI stated that the wastes are nonhazardous.

Waste Management:

This sump collected approximately 15 gallons of waste per year. This material, although considered nonhazardous, was mixed with the ink wash wastes in the waste ink sump and then pumped in to one of the 5,000-gallon storage tanks.

SV Results:

One sample of the water soluble oil waste was collected and sent to the EPA central regional laboratory to be analyzed for VOCs and total metals. PRC had not received the analytical results as of the drafting of this report.

3.12 SOLVENT WASTE ACCUMULATION DRUM

Description:

DKI maintains a 55-gallon drum to collect solvent waste. The waste solvent drum is located in the small parts machine area.

Status:

The facility is currently using this accumulation drum for less than 90-day storage.

Waste Type:

The waste solvent drum collects "oily" 1,1,1-TCA used as a pen tip wash, and "spent" 1,1,1-TCA used to degrease some machine parts.

Waste Management:

The DKI facility generates approximately 150 gallons of waste solvent each year. They are shipped off-site every 90 days via Eaken Transporters to SRS in Linden, New Jersey for reclamation. DKI previously used Spectron in Elkton, Maryland, as its reclamation facility.

3.13 SILKSCREEN WASTE ACCUMULATION DRUM

Description:

DKI maintains a 55-gallon drum to collect silkscreen wash waste. The drum is located in the general storage area.

Status:

The facility is currently using this accumulation drum for less than 90-day storage.

Waste Type:

DKI classifies the silkscreen wash as a F006 waste.

Waste Management:

The DKI facility generates approximately 150 gallons of silkscreen wash waste each year. This waste is shipped off-site every 90-day via Eaken Transportors to SRS in Linden, New Jersey. DKI previously used Spectron in Elkton, Maryland.

4.0 KNOWN AND SUSPECTED RELEASES

The known and suspected environmental releases from the SWMUs are discussed in Sections 4.1 to 4.4. The four potential migration pathways that exist for release from the SWMUs are surface water, ground water, soil, and air.

4.1 SURFACE WATER

Although no surface water releases have been recorded, their potential exists. DKI operates a wastewater treatment plant which disposes of treated sanitary wastewater through a NPDES-permitted outfall into Pine Creek. The outfall pipe only discharges intermittently. During the SV, PRC personnel observed the outfall pipe discharge for approximately 1 minute. The effluent was clear and there was no visible environmental impact around the discharge pipe.

During the SV, PRC identified a ground-water seep and a spring east of Route 61 which flow southeast and enters Pine Creek. The base of the spring, located just downslope from an area of ground-water seepage, was stained a rust-red and covered with molds. Vegetation on both sides of the spring was impacted. Three locations in the spring drainage and Pine Creek were sampled to check for releases: (1) at the spring, (2) at the confluence of the spring drainage and Pine Creek, and (3) approximately 450 feet upstream of the confluence, 50 feet upstream of the NPDES outfall.

Three water and four sediment samples were collected; one water/sediment pair at each location and a sediment duplicate at the upstream locations. Complete analytical results are given in Appendix A and a summary is given in Table 5. Low concentrations of both inorganic and organic contaminants were found in both the surface water and sediments. Water from the spring drainage at the source and at the confluence with Pine Creek contained arsenic and methylene chloride. The sediments from the spring source also contained higher concentrations of arsenic, chromium, lead, mercury, methylene chloride, and acetone than the upstream creek sediments. Lead is the only contaminant which has been detected in significant quantities in on-site ground water. Methylene chloride was also not detected in concentrations greater than those in the field blank.

TABLE 5

SV ANALYTICAL RESULTS FOR PINE CREEK AND THE SPRING DRAINAGE

Inorganics	Spring Surface Water (ug/L)	Confluence Surface Water (ug/L)	Pine Creek Surface Water (ug/L)	Spring Sediment (mg/kg)	Confluence Sediment (mg/kg)	Pine Creek Sediment (mg/kg)
Arsenic	3.2	ND	1.5	11 L	5.0 L	5.6 L
Barium	26 B	33 B	47 B	95	102	106
Chromium	ND	ND	1.0	41 L	17 L	12 L
Lead	3.8 B	ND	3.3 B	50 L	31 L	24 L
Mercury	ND	ND	ND	0.5	0.3	ND
Organics	(ug/L)	(ug/L)	(ug/L)	(ug/kg)	(ug/kg)	(ug/kg)
Methylene Chloride	9	22	--	34	33	25
Acetone	UJ	UJ	20 J	393	187	131
2-Butanone	R	R	--	21 J	UJ	UJ
Toluene	--	--	--	--	44	--

Notes:

B - Not detected substantially above the level reported in laboratory or field blanks.

L - Analyte present; reported value maybe biased low; actual value is expected to be higher.

J - Analyte present; reported value may not be accurate or precise.

UJ - Not detected; quantitation limit may not be accurate or precise.

R - Unreliable result; analyte may or may not be present in the sample. Supporting data necessary to confirm result.

ND - Not detected.

Site run off may also result in a surface water release. The site does not have runoff control in the area of the closed surface impoundments or in other areas outside of the plant. Uncontrolled site runoff would enter Pine Creek. A release from soils to surface water is possible during precipitation. Also, overtopping of the surface impoundments may have occurred in the past, although such an incident has not been documented.

4.2 GROUND WATER

DKI and EPA have identified ground-water contamination at the facility and in nearby private water supply wells. In 1983, DKI noted elevated levels of trichloroethylene (TCE), methylene chloride, and 1,1,-dichloroethane (1,1-DCA) in its production well (see Table 3). In 1984, EPA confirmed elevated levels of these constituents (except for methyl chloride) and also noted 1,1-dichloroethylene (1,1-DCE), and 1,1,1-trichloroethane (1,1,1-TCA) in the production well, 1,1,1-trichloroethane in a residential well immediately south of the DKI property, and tetrachloroethylene (PCE) in a residential well immediately north of DKI (U.S. EPA, 1984). EPA concluded that the DKI facility may have impacted off-site ground water at one well, but that the presence of PCE in the second well appeared to be unrelated to DKI's activities (U.S. EPA, 1984).

Subsequently, DKI installed RCRA monitoring wells and confirmed the existence of an on-site contaminant plume (INTEX, 1985c). Graphical plots of contaminants over the last 2 to 3 years were prepared by DKI's consultant, INTEX, and are included as Appendix B. These plots indicate the relative values of contaminant concentrations in on-site RCRA wells. Identified ground-water contaminants include TCE, 1,1,1-TCA, 1,2-DCE, 1,1-DCE, and 1,1-DCA. During the September 12, 1985, sampling of RCRA monitoring wells, GCA Technology Division, Inc., was present for an inspection and collected split samples. The results from EPA's Annapolis Laboratory are also shown in Appendix B. Lead concentrations in wells 3 and 4 were 44 ug/L and 29 ug/L, respectively. Both results are above the proposed recommended maximum contaminant level for lead set by the U.S. EPA. The most recent analytical results, indicate that levels of most organic contaminants in the production well and well 3 are higher than previous results, and that the measured level of TCE in well 3 is above previous values (INTEX, 1987). This may indicate a trend of increasing ground-water contamination.

The highest concentrations of volatile organic constituents observed at DKI were:

- o Trichloroethylene: 54 parts per billion (ppb) in the production well
- o 1,1,1-Trichloroethane: 142 ppb in well 3
- o 1,2-Dichloroethylene: 13.5 ppb in well 1-S
- o 1,1-Dichloroethane: 38 ppb in the production well
- o 1,1-Dichloroethylene: 4.0 ppb in the production well

PRC collected ground-water samples from the production well and a water fountain in the buffing room within the plant. The water samples from the fountain were collected from the line prior to entry into the refrigerant section of the fountain, but after the water had passed through an activated carbon filter. DKI did not know when the filter had previously been changed. A duplicate of the fountain sample was also taken. The results for these samples are summarized in Table 6.

The concentrations of volatile organic contaminants (VOCs) in the production well were slightly lower than the levels found in the previous round collected in November 1986. Concentrations of VOCs in the water fountain samples are approximately half the concentrations in the production well. Trichloroethylene concentrations are approximately three times greater than current MCL levels. These results show that the activated carbon filter on this line is not effectively removing the organic contaminants. The frequently of replacement of the filters is unknown.

4.3 SOIL

PRC also has information concerning potential soil releases. A consultant to DKI conducted soil borings at five locations adjacent to the closed surface impoundments. Results of samples from borings (depth not specified) are shown in Table 7. These results indicate elevated levels of methylene chloride, TCE, and toluene. The highest values for these constituents were found at boring A, which was drilled as an upgradient location (Reider, 1983).

TABLE 6
SV ANALYTICAL RESULTS FOR GROUND WATER MCLs, AND PROPOSED RMCLs

Inorganics	Production Well (ug/L)	Water Fountain (ug/L)	Water Fountain (ug/L)	Proposed RMCL (mg/L)
Arsenic	22	ND	ND	0.05
Chromium	ND	0.8	ND	0.12
Lead	4.6B	10 B	3.5B	0.02
				Final MCL
Organics	(ug/L)	(ug/L)	(ug/L)	(mg/L)
Methylene Chloride	5	ND	4	NS
1,1,-DCA	31	22	18	NS
1,1,1-TCA	17	9	7	.20
TCE	27	16	14	.005

Notes:

B -- Not detected substantially above the level reported is laboratory

J -- Analyte present; reported value may not be accurate or period

ND -- Not detected

NS -- No standard

TABLE 7

ANALYTICAL RESULTS FOR BORINGS NEAR IMPOUNDMENTS 1 AND 2

	BORE LOCATION				
Inorganics%[a]	A	B	C	D	E
Cyanide	0.000	0.000	0.000	0.000	0.000
Phenol	0.000	0.000	0.000	0.000	0.000
Arsenic	0.00061	0.00059	0.00073	0.00079	0.00061
Barium	0.0024	0.0041	0.0034	0.0032	0.0029
Chromium	0.0016	0.0013	0.0014	0.0013	0.0013
Copper	0.0028	0.0023	0.0021	0.0022	0.0021
Lead	0.0024	0.0026	0.0023	0.0021	0.0019
Mercury	$<1.0 \times 10^{-5}$	$<1.0 \times 10^{-5}$	$<1.0 \times 10^{-5}$	$<1.0 \times 10^{-5}$	$<1.0 \times 10^{-5}$
Nickel	0.0045	0.0042	0.0041	0.0039	0.0035
Selenium	1.4×10^{-5}	1.4×10^{-5}	1.2×10^{-5}	1.3×10^{-5}	1.4×10^{-5}
Zinc	0.0103	0.0088	0.0088	0.0078	0.0075
Organics (ppb)					
Chloroform	<10	<10	<10	<10	<10
Trichloroethylene	62.5	10	<10	50	25
Methylene Chloride	100	37.5	37.5	125	100
Chlorobenzene	<20	<20	<20	<20	<20
1,1-Dichlorobenzene	<10	<10	<10	<10	<10
Ethyl benzene	<20	<20	<20	<20	<20
Toluene	300	<20	<20	150	200

Notes:

[a] All values are percentages based on the air-dried sample weight

Source: Reider, 1983

The elevated values from borings located around the two surface impoundments may indicate subsurface contaminant migration from the units or contamination resulting from overtopping of the units. Since the boring at location A was installed as an upgradient source, it is possible that the elevated levels at this location are a result of overtopping of the units.

During the SV, PRC identified a release to the soil at the underground fuel tank, previously discussed in Section 3.9. The soil surface in the area of the spill appeared dark and oily. There was no vegetation present in the affected area around the tank standpipe and filling port. The area was approximately 3 to 4 feet in diameter. Analytical results of the soil sample collected showed high concentrations of 1,1,1-TCA (813 ppm) and lead (2,960 ppm).

DKI personnel transfer one to two buckets of waste pen tip oil per day to the fuel tank via the filling port. Any spillage would affect the soil in the area immediately around the pipe. DKI uses 1,1,1-TCA as a pen tip degreaser and segregates the waste from the pen tip oil. However, the presence of 1,1,1-TCA in the soil suggests the presence of this constituent in the waste pen tip oil.

Since the waste oil is generated during the formation of the pen tips in the small parts machine, it is possible the lead may also be a constituent in the waste oil. Alternatively, the lead may be a constituent in the fuel that DKI uses to fill its fuel tank.

Well 3, which is contaminated with both 1,1,1-TCA and lead, is the closest downgradient well to the soil release and the underground fuel tank. Therefore, the 1,1,1-TCA and lead contamination in the soil due to surface spillage or leakage from the underground fuel tank may be migrating downward and contaminating the ground water beneath it.

4.4 AIR

No documented air releases were identified during the PR and SV.

5.0 HUMAN AND ENVIRONMENTAL TARGETS

The DKI facility is located approximately 1/4 mile north of the Borough of Deer Lake. The area immediately around the facility is primarily rural, with some residences and a few commercial operations. Deer Lake is a small community (population less than 2,000). The majority of the residences within the Pine Creek floodplain are to the east and southeast of DKI. The area west of DKI is largely undeveloped, forested property on a steep hillside.

The environmental release pathways from the site are through surface water, ground water, soil, and air. Ground-water contamination has been identified in both on-site and near-site wells. Contaminants have been released to the soils around the fuel tank and near the surface impoundment. Detailed discussions of environmental targets via these pathways are provided below.

5.1 SURFACE WATER

There are two potential surface water receptors near the DKI facility: a small pond located about 200 feet east of Route 61, and Pine Creek, which drains into Deer Lake about 1/4 mile downstream. There are three potential release mechanisms to surface water involving the DKI facility:

- o Release through the facility's regulated NPDES outfall to Pine Creek
- o Uncontrolled surface runoff from the site to Pine Creek and the pond
- o Contaminated ground-water discharge to Pine Creek and the pond

No releases have been identified via the first two mechanisms. However, the potential exists for runoff from contaminated soils or the closed surface inpoundments. PRC identified ground-water seepage and a spring which discharges into Pine Creek. Although low concentrations of inorganic and organic contaminants were found in the spring water and in the spring sediments, none of these contamiants are approaching levels which are health concerns. In addition, these compounds have not been detected in on-site ground water. However, both Pine Creek and the pond may have the potential to receive contamination through contact with contaminated ground water.

No information concerning the community of Deer Lake's use of surface water was obtained. Data obtained from PADER indicates that Deer Lake's water is supplied primarily by wells. However, the Borough of Auburn (located approximately 3 miles downstream of the facility) obtains its drinking water from Pine Creek (PADER, 1984). It is not known if the pond, Pine Creek, or Deer Lake support a population of aquatic life such as fish. Both the flora and fauna of these surface waters could be affected by contamination. If any of the aquatic life is used as a food source, then humans could be affected.

5.2 GROUND WATER

The on-site ground water has primarily been contaminated by light halogenated hydrocarbons. In a 1984 EPA study, several private off-site wells were sampled for hazardous metals and organic constituents. The results indicated 15 ppb of trichloroethylene in one off-site well located approximately 500 feet south of the site; a second off-site well, about 2,000 feet north of the DKI property had 4 ppb of tetrachloroethylene (EPA, 1984).

PRC visited PADER's Bureau of Topographic and Geologic Survey to obtain information on near-site well usage. The information obtained did not indicate whether Deer Lake has a public water supply, but did indicate that many residents in the Deer Lake area have installed wells. Most of the available boring logs, however, do not have enough information to accurately locate wells on a map. Additionally, DKI uses its on-site production well as a public water supply. Mr. Gavaletz indicated that workers drink water originating from the production well, but that each drinking water fountain has an activated carbon filter. Results of the SV indicated that even after filtering, the drinking water still contained volatile organic compounds. TCE concentrations were above current MCLs (see Table 6). However, U.S. EPA indicated that the facility has subsequently switched to a bottled water supply.

Contamination has been noted in near-site wells and at RCRA well 5, which is near DKI's site boundary. Analytical data indicate:

- o TCE levels in on-site wells and one off-site well exceed MCLs.

- 1,1-DCE and 1,1,1-TCA levels of on-site wells are below, but approach, the established MCLs.

Other off-site wells, especially those located south and east of the facility, have the potential to become contaminated.

5.3 SOIL

During the SV, a soil release was identified above the underground fuel tank. The top 2 inches of soil were contaminated with elevated concentrations of 1,1,1-TCA and lead. Direct contact by humans with this soil is possible.

Soils surrounding the closed lagoons have also been tested for RCRA hazardous constituents. These analyses indicate some elevated levels of hazardous volatile organic constituents. The depths of these samples and the extent of soil release are not known. Therefore, it is not clear whether humans could come into direct contact with this contaminated soil.

The general increase in contaminant levels at the production well, well 3, and well 5 indicates that release from soils to ground water may be occurring from the spillage by the fuel tank, from the closed surface impoundment area, or from another unknown source.

5.4 AIR

Since the surface impoundments are closed and solvents and generated waste at DKI are stored in drums or covered underground tanks, the potential for off-site migration of organics via air is low. Workers at DKI would be the major receptors of any air release resulting from the handling of solvent waste or from windblown contaminants in the spill area.

6.0 SUMMARY OF FINDINGS

The information obtained during the PR, VSI, and SV is summarized below:

- Ground-water contamination was first found by DKI in their on-site production well in 1983. EPA confirmed contamination in on-site wells and downgradient off-site wells in 1984. Six monitoring wells were subsequently installed by DKI. The following contaminants have been found: TCE, 1,1,1-TCA, 1,1-DCE, 1,1-DCA, 1,2-DCE, and lead.

- Thirteen SWMUs have been identified at the DKI site. These include closed surface impoundments, an underground storage tank area, waste ink sump, wastewater treatment plant, wastewater effluent lagoon, barrel storage yard, oil filtration unit, household trash dump, building material dump, underground fuel tank, water-soluble oil waste sump, solvent waste accumulation drum and a silkscreen waste accumulation drum.

  Only the closed surface impoundments and underground storage tanks are considered by DKI to be subject to RCRA-regulations. The underground storage tanks store materials for less than 90 days. As a result, the only analytical information available for SWMUs was that collected during the SV and previous date for the surface impoundment.

- Soil contamination was identified around the filling pipe above the underground fuel tank. Laboratory analysis indicates that the top 2 inches of soil contains 814 ppm 1,1,1-TCA and 2,960 ppm lead.

- The source of the soil contamination may be waste pen tip oil which is added to the fuel tank on a daily basis.

- Elevated concentrations of 1,1,1-TCA in ground water down gradient of the fuel tank may be due to the soil contamination or leakage from the underground fuel tank.

- In general, the latest RCRA ground-water monitoring results indicate an increase in observed contaminant levels. This suggests that a source for continued contaminant release exists, either from the soil release above the underground fuel tank, the underground fuel tank, the closed surface impoundments, or from another unidentified source.

- The level of TCE in ground water from the near-site private water supply well (15 ppb) and the on-site production well exceeds EPA-established MCLs. Although the facility installed activated carbon filters in on-site water fountains, TCE levels were still found to be above MCL levels. DKI currently supplies its employees with bottled water.

- Low levels of VOCs were found in soils around the perimeter of the closed surface impoundments. The depths of the samples were not determined.

- Concentrations of arsenic, chromium, lead, methylene chloride, and acetone were higher in sediments near the spring discharge than in sediments from Pine Creek.

- At the time of the SV, the facility operated two of its four underground storage tanks for storing RCRA hazardous wastes (waste solvents from ink washes).

- Prior to 1981, the wastewater effluent lagoon received supernatant from chrome plating wastes. This indicates that the lagoon may be a RCRA-regulated unit.

- DKI's wells are not constructed in accordance with EPA criteria for RCRA ground-water monitoring. Therefore, data from these wells must be carefully evaluated when assessing the extent of ground-water release.

LIST OF INTERVIEWEES

U.S. EPA Region 3, Philadelphia, PA

Pat McManus, RCRA Enforcement Section	215-597-3923
John Hundtermark, Water Enforcement	215-597-9047

Pennsylvania Department of Environmental Resources
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Donna Schneider, Bureau of Topographic and Geologic Survey	717-787-5828
Vincent Bartushas, Division of Water Supplies	717-783-3795
John Mellow, Hydrogeologist	717-826-2064

Pennsylvania Department of Environmental Resources
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Bob Louis, Hazardous Waste Coordinator	717-826-5504
Henry Hodick, Compliance Specialist	717-826-2553
Dino Agostini, Sanitary Engineer	717-826-2553

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APPENDIX A

ANALYTICAL RESULTS FROM SAMPLING VISIT

FINAL REPORT
INORGANIC DATA VALIDATION
CASE 7565

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, D.C. 20460

Work Assignment No.	:	260
EPA Region	:	III
Facility I.D. No.	:	N/A
Contract No.	:	68-01-7331
CDM Federal Programs		
Corporation Document No.	:	T260-CO3-FR-BZKU-2
Prepared By	:	Geoscience Consultants, Ltd.
Work Assignment Project Manager	:	James L. Hewitt, Jr.
Telephone Number	:	(301) 587-2088
Primary Contact	:	D. Jeff Barnett
Telephone Number	:	(215) 597-6688
Date Prepared	:	June 2, 1988

DATA VALIDATION EVALUATION CHECKLIST

Case/SAS Number: 7565 Site Name: David Kohn, Inc.
Revision Number: 1 Analysis Type: Inorganics, RAS
Reviewer/Co.: B.T. Nicholson SOW #: 784
Date submitted to EPA: ________ Date received at EPA: ________
Information request date: ________ ________
Information received date: ________ ________ # of hours spent on ~~review~~ revisions: 5 hours
EPA RPM/DPO: Dana Barnett / Chuck Sands
EPA Site Project Officer: Joe Kotlinski

CRITERIA	YES	NO	COMMENTS
Completeness	___	___	________
Format according to Region III protocol	___	___	________
Clarity of report	___	___	________
Qualifiers applied correctly	___	___	________
Consistency between narrative, data summary form(s), and DPO report	___	___	________
Transcription errors	___	___	________

EFFICIENCY OF CONTRACTOR	YES	NO	COMMENTS
Approval recommended for current submission	___	___	________
Previously noted discrepencies corrected	___	___	________
Time spent on review is reasonable	___	___	________

ESD OVERSIGHT

Reviewed by ________
Date review assigned ________
Date feedback given ________

Attachment(s), check if applicable: phone log ____ letter ____ comments ____

cc: Patricia J. Krantz

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

301-224-2740
FTS-922-3752

DATE January 26, 1988, REVISED May 17, 1988

SUBJECT: Region III CLP Data QA Review (RCRA Samples)

FROM : Patricia J. Krantz (3ES23)
Chief, Quality Assurance Section

TO : Joe Kotlinski
RCRA Enforcement

Attached is a Region III CLP Data Review done by reviewers at Geoscience Consultants, LTD in support of Region III's RCRA program.

Case No.: 7565 Site: David Kahn, Inc.

Laboratory: Hittman Reviewer: B.V.Nicholas

Attachment

cc: QA Officer, EMSL-LV

Regional DPO: Chuck Sands

__________ Action __________ FYI

JH:wbg

Geoscience Consultants, Ltd.

GCL

500 Copper Avenue NW, Suite 200
Albuquerque, New Mexico 87102
(505) 842-0001 TELEX (505) 842-0595

1109 Spring Street, Suite 706
Silver Spring, Maryland 20910
(301) 587-2088

May 23, 1988

Mr. Harry Butler
CDM Federal Programs Corporation
13135 Lee Jackson Memorial Highway
Suite 200
Fairfax, Virginia 22033

RE: WORK ASSIGNMENT 260; FINAL INORGANIC DATA VALIDATION REPORT FOR CASE 7565

Dear Mr. Butler:

GCL is pleased to submit the Final Inorganic Data Validation Report for Case 7565 under WA 260. GCL has addressed all comments which were provided by the EPA Central Regional Laboratory in this Final Report.

Please contact me if you have any questions pertaining to the enclosed document.

Yours very truly,
GEOSCIENCE CONSULTANTS, LTD.

James L. Hewitt, Jr., P.E.
Program Manager

BVN\jf\TES3\CRON\BUTLER4.LTR

Enclosures (2)

cc (w/enclosures(7)): Mark diFeliciantonio, CDM FPC, Region III

Geoscience Consultants, Ltd.

GCL

500 Copper Avenue NW, Suite 200
Albuquerque, New Mexico 87102
(505) 842-0001 TELEX (505) 842-0595

1109 Spring Street, Suite 706
Silver Spring, Maryland 20910
(301) 587-2088

DATE: January 26, 1988, Revised May 17, 1988

SUBJECT: Inorganic Data Validation, Case 7565
Site: David Kahn, Inc.

FROM: B.V. Nicholas (GCL) KT for
Project Manager

TO: Joe Kotlinski
RCRA Enforcement Section

Overview

The set of samples for Case 7565, David Kahn, Inc., contained seven soil samples and ten water samples, which were analyzed through The Contract Laboratory Program Routine Analytical Services. The reviewer was unable to correlate the sample numbers and sample locations utilizing the sample tags and traffic reports, therefore, sample locations are not provided on the data summary sheets.

The data were reviewed according to the National Functional Guidelines for Evaluating Inorganic Analysis. The text of this report addresses only those problems affecting usability.

Summary

All elements were successfully analyzed, with the exception of those qualified "R." Areas of concern with respect to data usability are listed according to the seriousness of the problem. These include:

Major Problems:

Possible matrix interference or laboratory specific problems indicated by an extremely low recovery of the matrix spike sample for Sb, Water (0%); Se, soil (0%); Tl, soil (0%); Pb, soil (6%); As, soil (9.5%); and Sb, soil (29%).

The laboratory did not analyze a lab duplicate or a matrix spike sample for the CN water matrix samples.

Minor Problems:

Low recovery of the matrix spike soil samples for CN (69%), Cr (35%), Cu (43%), and Ni (31%) and low recovery of the matrix spike water samples for Fe (66%), Ag (62%), Tl (48%) and Sn (41%).

Preparation blank contamination for Pb and Zn (water); and Na and Ba (water and soil).

Information Regarding Report Content

Table 1 is a summary of qualifiers added to the laboratory's results by GCL during data validation.

GCL

TABLE 1
SUMMARY OF QUALIFIERS ON DATA SUMMARY
AFTER DATA VALIDATION, CASE 7565

Aralyte	Samples Affected	Qualifier Positive Values	Qualifier Non-Detected Values	Bias	Comments*
Sb	MCJ 202--MCJ 210, MCJ 212--MCJ 217		R	Extremely Low	C (0%) (29%)
As	MCJ 202, MCJ 204 MCJ 206, MCJ 208, MCJ 209, MCJ 214, MCJ 215	L		Extremely Low	C (9.5%)
Ba	MCJ 203, MCJ 205, MCJ 207, MCJ 210, MCJ 212--MCJ 218,	B		High	E
Cr	MCJ 202, MCJ 204, MCJ 206, MCJ 208, MCJ 209, MCJ 214, MCJ 215	L		Low	B (35%)
Cu	MCJ 202, MCJ 204, MCJ 206, MCJ 208, MCJ 209, MCJ 214, MCJ 215	L	UL	Low	B (43%)
Fe	MCJ 203, MCJ 205, MCJ 207, MCJ 210, MCJ 212, MCJ 213, MCJ 216, MCJ 217, MCJ 218	L	UL	Low	B (66%)
Pb	MCJ 202, MCJ 204, MCJ 206, MCJ 208, MCJ 209, MCJ 214, MCJ 215	L		Extremely Low	C (6%)
	MCJ 203, MCJ 207, MCJ 210, MCJ 213, MCJ 216, MCJ 217, MCJ 218	B		High	E
Ni	MCJ 202, MCJ 204, MCJ 206, MCJ 208, MCJ 209, MCJ 214, MCJ 215	L		Low	B (31%)

* See explanation of comments in Attachment 1

GCL

TABLE 1 (CONTINUED)
SUMMARY OF QUALIFIERS ON DATA SUMMARY
AFTER DATA VALIDATION CASE 7565

Analyte	Samples Affected	Qualifier Positive Values	Qualifier Non-Detected Values	Bias	Comments*
Se	MCJ 202, MCJ 204, MCJ 206, MCJ 208, MCJ 209, MCJ 214, MCJ 215		R	Extremely Low	C (0%)
Ag	MCJ 203, MCJ 205, MCJ 207, MCJ 210, MCJ 212, MCJ 213, MCJ 216, MCJ 217, MCJ 218		UL	Low	B (62%)
Na	MCJ 204, MCJ 206, MCJ 207, MCJ 209, MCJ 212, MCJ 214, MCJ 215, MCJ 218,	B		High	E
Tl	MCJ 203, MCJ 205, MCJ 207, MCJ 210, MCJ 212, MCJ 213, MCJ 216, MCJ 217, MCJ 218		UL	Low	B (48%)
	MCJ 202, MCJ 204, MCJ 206, MCJ 208, MCJ 209, MCJ 214, MCJ 215		R	Extremely Low	C (0%)
Sn	MCJ 203, MCJ 205 MCJ 207, MCJ 210 MCJ 212, MCJ 213, MCJ 216, MCJ 217, MCJ 218		UL	Low	B (41%)
Zn	MCJ 205, MCJ 207, MCJ 210	B		High	E
CN	MCJ 202		UL	Low	B (69%)
	MCJ 210--MCJ 212		R		H

* See explanation of comments in Attachment 1

ATTACHMENTS:

Attachment 1- Glossary of data qualifier codes.

Attachment 2- Data Summary. This includes:

a) All positive results with qualifier codes, if applicable;

b) All unusable detection limits qualified with an "R"; and

c) All estimated detection limits qualified with UJ or UL.

APPENDICES:

Appendix A - Results as reported by the laboratory (no corrections were made during data validation). Glossary of footnotes used by the laboratory.

Appendix B - DPO Report.

Appendix C - Support Documentation.

Appendix D - Telephone Communication.

ATTACHMENT 1
GLOSSARY OF DATA QUALIFIER CODES

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION
(confidence concerning presence or absence of compounds):

U = NOT DETECTED. THE ASSOCIATED NUMBER INDICATES APPROXIMATE SAMPLE CONCENTRATION NECESSARY TO BE DETECTED.

(NO CODE) = CONFIRMED IDENTIFICATION

B = NOT DETECTED SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.

R = UNRELIABLE RESULT. ANALYTE MAY OR MAY NOT BE PRESENT IN THE SAMPLE. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.

K = ANALYTE PRESENT. REPORTED VALUE MAY BE BIASED HIGH. ACTUAL VALUE IS EXPECTED TO BE LOWER.

L = ANALYTE PRESENT. REPORTED VALUE MAY BE BIASED LOW. ACTUAL VALUE IS EXPECTED TO BE HIGHER.

UJ= NOT DETECTED, QUANTITATION LIMIT MAY BE INACCURATE OR IMPRECISE.

UL= NOT DETECTED, QUANTITATION LIMIT IS PROBABLY HIGHER.

OTHER CODES

Q = NO ANALYTICAL RESULT.

Codes Used in Comments Column

A = Due to a high spike recovery (% recovery in parentheses), indicating a matrix interference, the reported results may be biased high.

B = Due to a low spike recovery (% recovery in parentheses), indicating a matrix interference or laboratory specific problems, the reported results may be biased low and/or the actual detection limits may be higher than reported.

C = Due to an extremely low spike recovery (% recovery in parentheses), indicating a matrix interference or laboratory specific problems, the reported results may be biased extremely low and/or the actual detection limits may be much higher than reported. The possibility of false negatives exists.

D = The percent recovery of the calibration verification for these samples was lower than the contract limit of 90%, but was greater than 50%. Therefore, these samples may be biased low.

E = One or more of the blanks associated with these samples gave a positive response greater than twice the IDL (instrument detection limit). Associated sample results were less than 5 times the concentration in the preparation blank. It is not possible to verify whether the analyte detected in the sample was due to blank contamination, therefore, reported results may be biased high.

F = Due to an extremely high spike recovery (% recovery in parentheses) indicating a matrix interference or laboratory specific problems, the reported results may be biased extremely high.

G = Based on relative percent difference of the analysis of duplicates, the reported results for these samples may not reflect the true average concentration. This may stem from poor dilution procedures by the laboratory.

H = Laboratory did not analyze a lab duplicate and a matrix spike sample for each analytical parameter and matrix type.

ATTACHMENT 2

DATA SUMMARY

DATA SUMMARY FORM : I N O R G A N I C S

ase Number: 7565
ite Name: DAVID KAHN, INC.
ate of Sampling: 7-8-87

WATER SAMPLES
(ug/L)

+Due to dilution, sample quantition limit is affecte
See dilution table for specifics.

SEE GLOSSARY FOR CODE DEFINITIONS

CRQL~	Sample No. / Location / ANALYTE	MCJ 203		MCJ 205		MCJ 207		MCJ 210		MCJ 211		MCJ 212		MCJ 213		MCJ 216		MCJ 217		MCJ 218	
200	Aluminum	328		189		536		186			Q										
60	Antimony		R		R		R		R		Q		R		R		R		R		R
10	*ARSENIC	3.2				1.5					Q									22	
200	Barium	26	B	33	B	47	B	64	B		Q	7.0	B	24	B	24	B	23	B	25	B
5	Beryllium										Q										
5	*CADMIUM										Q										
5000	Calcium	15300		12800		13300		24600			Q			21200		20100		18500		18000	
10	*CHROMIUM					1.0					Q					0.8					
50	Cobalt										Q										
25	Copper										Q										
100	Iron	6160	L	630	L	830	L	6420	L		Q		UL	140	L	83	L	19	L	[illegible]	L
5	*LEAD	3.8	B			9.3	B	9.6	B		Q			16	B	10	B	3.5	B	[illegible]	B
000	Magnesium	5870		4420		3810		5110			Q			4430		3830		3560		3430	
15	Manganese	365		112		63		813			Q			34		[illegible]		25		93	
0.2	Mercury										Q										
40	*NICKEL							36			Q										
000	Potassium	511		1160		1300		2910			Q	128		432		368		330		347	
5	Selenium										Q										
10	Silver		UL		UL		UL		UL		Q		UL		UL		UL		UL		UL
000	Sodium	11300		8120		4670	B	22200			Q	607	B	13100		11000		11000		1560	B
10	Thallium		UL		UL		UL		UL		Q		UL		UL		UL		UL		UL
40	Tin		UL		UL		UL		UL		Q		UL		UL		UL		UL		UL
50	Vanadium										Q										
20	Zinc	56		15	B	7.0	B	17	B		Q			58		115		103			
10	Cyanide		Q		Q		Q		R		R		R		Q		Q		Q		Q

Case Number: 7565

Site Name: DAVID KAHN, Inc.

Date of Sampling: 7-7-87 / 7-8-87

DATA SUMMARY FORM : I N O R G A N I C S

SOIL SAMPLES
(mg/Kg)

+Due to dilution, sample quantition limit is affected
See dilution table for specifics.

SEE GLOSSARY FOR CODE DEFINITIONS

	Sample No.	MCJ-202		MCJ-204		MCJ 206		MCJ 208		MCJ 209		MCJ 214		MCJ 215							
	% Solids	12.7		26.7		29.6		47.8		56.7		89.8		81.3							
	Location																				
CRQL*	ANALYTE																				
40	Aluminum	22000		8720		10300		10100		7110		146		12400							
12	Antimony		R		R		R		R		R		R		R						
2	Arsenic	7.9	L	11	L	5.0	L	5.6	L	5.0	L	1.6	L	12	L						
40	Barium	265		95		102		106		79		11	B	64	B						
1	Beryllium																				
1	Cadmium	12												4.2							
1000	Calcium	23500		1790		1960		826		734		313		1600							
2	Chromium	41	L	17	L	12	L	14	L	11	L	34	L	31	L						
10	Cobalt	62						23		11		6.6		29							
5	Copper	2390	L		UL		UL		UL		UL	102	L	174	L						
20	Iron	30300		37700		23600		23000		16600		1350		27100							
1	*LEAD	164	L	50	L	51	L	24	L	[illegible]	L	41	L	*2760	L						
1000	Magnesium	3480		1630		[illegible]		2310		1860		447		[illegible]							
3	Manganese	1560		360		615		[illegible]		380		205		1200							
0.2	Mercury	1.0		0.5		0.3				0.1											
8	Nickel	1970	L	56	L	41	L	35	L	21	L	13	L	78	L						
1000	Potassium	1800		936		1120		1070		719		72		1350							
1	Selenium		R		R		R		R		R		R		R						
2	Silver																				
1000	Sodium	[illegible]		407	B	231	B	637		201	B	92	B	144	B						
2	Thallium		R		R		R		R		R		L		R						
8	Tin																				
10	Vanadium	58						22				28		20							
4	Zinc	1860		60		77		96		71		156		245							

DRAFT
ORGANIC DATA VALIDATION REPORT
CASE 7565

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, D.C. 20460

Work Assignment No.	:	260
EPA Region	:	3
Site No.	:	N/A
Contract No.	:	68-01-7331
CDM Federal Programs Corporation Document No.	:	T260-R03-DR-BFBS-2
Prepared By	:	Geoscience Consultants, Ltd.
Work Assignment Project Manager	:	Judith Matthews
Telephone Number	:	(301) 587-2088
Primary Contact	:	Dana Matthews
Telephone Number	:	(215) 597-6688
Date Prepared	:	November 19, 1987

TAL3-20

ATTACHMENT 1

GLOSSARY OF DATA QUALIFIER CODES

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION
(confidence concerning presence or absence of compounds):

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(NO CODE) = CONFIRMED IDENTIFICATION.

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CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

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UL= NOT DETECTED, QUANTITATION LIMIT IS PROBABLY HIGHER.

OTHER CODES

Q = NO ANALYTICAL RESULT.

\6551JOE.RPT

ATTACHMENT 2
DATA SUMMARY

DATA SUMMARY FORM: VOLATILES

Case Number: 7565
Site Name: David Kahn
Date of Sampling: 7/8/87

WATER SAMPLES
(ug/L)

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

SEE GLOSSARY FOR CODE DEFINITIONS

Sample No.	CK302		CK304		CK306		CK309		CK310		CK311		CK314		CK315		CK316	
Dilution Factor	1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0	
Location	G.W. Seep		SW-006		SW-008		SW-011		SW-013		SW-014		SW-017		SW-018		SW-019	
COMPOUND																		
Chloromethane		UJ		UJ		UJ		UJ		UJ		UJ		UJ		UJ		UJ
Bromomethane																		
*VINYL CHLORIDE																		
Chloroethane																		
Methylene Chloride	9		22						150						4	J	5	
Acetone		UJ		UJ	20	J		J	22	J	22	J		UJ		UJ		UJ
Carbon Disulfide																		
*1,1-DICHLOROETHENE																		
1,1-Dichloroethane											12		22		18		31	
*TOTAL-1,2-DICHLOROETHENE																		
Chloroform																		
*1,2-DICHLOROETHANE																		
*2-BUTANONE		R		R														
*1,1,1-TRICHLOROETHANE											13		9		7		17	
*CARBON TETRACHLORIDE																		
Vinyl Acetate																		
Bromodichloromethane																		
*1,2-DICHLOROPROPANE																		
Cis-1,3-Dichloropropene																		
Trichloroethene													16		14		27	
Dibromochloromethane																		
1,1,2-Trichloroethane																		
*BENZENE																		
Trans-1,3-Dichloropropene																		

** CRQL Contract Required Quantitation Limit

* Action Level Exist

DATA SUMMARY FORM: V O L A T I L E S A N D B N A s

Case Number: 7565

Site Name: David Kahn

Date of Sampling: 7/8/87

WATER SAMPLES
(ug/L)

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

SEE GLOSSARY FOR CODE DEFINITIONS

CRQL*	Sample No.	CK302		CK304		CK306		CK309		CK310		CK311		CK314		CK315		CK316	
	Dilution Factor	1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0	
	Location	G.W. Seep		SW-006		SW-008		SW-011		SW-013		SW-014		SW-017		SW-018		SW-019	
	COMPOUND																		
5	Bromoform																		
10	4-Methyl-2-pentanone																		
10	2-Hexanone		UJ		UJ														
5	*TETRACHLOROETHENE																		
5	1,1,2,2-Tetrachloroethane																		
5	*TOLUENE																		
5	Chlorobenzene																		
5	*ETHYLBENZENE																		
5	*STYRENE											17							
5	*TOTAL XYLENES																		
10	Phenol																		
10	bis(2-Chloroethyl)ether																		
10	2-Chlorophenol																		
10	*1,3-DICHLOROBENZENE																		
10	*1,4-DICHLOROBENZENE																		
10	Benzyl Alcohol																		
10	1,2-Dichlorobenzene																		
10	2-Methylphenol																		
10	bis(2-Chloroisopropyl)ether																		
10	4-Methylphenol																		
10	N-Nitroso-di-n-propylamine																		
10	Hexachloroethane																		
10	Nitrobenzene																		
10	Isophorone																		
10	2-Nitrophenol																		

* CRQL = Contract Required Quantitation Limit

* Action Level Exists

DATA SUMMARY FORM: V O L A T I L E S

Case Number: 7565

Site Name: David Kahn

Date of Sampling: 7/8/87

SOIL SAMPLES
(ug/kg)

To calculate sample quantitation limits
(CRQL * Dilution Factor) / ((100 - % Moisture)/100)

SEE GLOSSARY FOR CODE DEFINITIONS

CRQL*	Sample No.	CK301	CK303	CK305	CK307	CK308	CK312	CK313			
	Dilution Factor	95	96	93	96	91	84	1000			
	% Moisture	85.5	61.8	63.6	47.5	46.8	25.3				
	Location	South WTL	G.W. Seep	SD-007	SD-009	SD-010	SD-015	SD-016			
	COMPOUND										
10	Chloromethane	UJ									
10	Bromomethane										
10	*VINYL CHLORIDE										
10	Chloroethane										
5	Methylene Chloride	262 B	34	33	25	32		13372 B			
10	Acetone	828	393	187	131	188	7 J	98837 B			
5	Carbon Disulfide										
5	*1,1-DICHLOROETHENE										
5	1,1-Dichloroethane										
5	*TOTAL-1,2-DICHLOROETHENE										
5	Chloroform										
5	*1,2-DICHLOROETHANE										
10	*2-BUTANONE	669 J	21 J	UJ	UJ	UJ		UJ			
5	*1,1,1-TRICHLOROETHANE	1172					UJ	813953			
5	*CARBON TETRACHLORIDE										
10	Vinyl Acetate		UJ	UJ	UJ	UJ		UJ			
5	Bromodichloromethane										
5	*1,2-DICHLOROPROPANE										
5	Cis-1,3-Dichloropropene										
5	Trichloroethene	UJ									
5	Dibromochloromethane										
5	1,1,2-Trichloroethane										
5	*BENZENE										
5	Trans-1,3-Dichloropropene										

DATA SUMMARY FORM: V O L A T I L E S   A N D   B N A s

Case Number: 7565

Site Name: David Kahn

Date of Sampling: 7/8/87

SOIL SAMPLES
(ug/Kg)

To calculate sample quantitation limits
(CRQL * Dilution Factor) / ((100 - % Moisture)/100)

SEE GLOSSARY FOR CODE DEFINITIONS

QL*	Sample No.	CK301	CK303	CK305	CK307	CK308	CK312	CK313			
	Dilution Factor	95	96	93	96	91	84	1000			
	% Moisture	85.5	61.8	63.6	47.5	46.8	25.3				
	Location	South WTL	G.W. Seep	SD-007	SD-009	SD-010	SD-015	SD-016			
	COMPOUND										
5	Bromoform										
0	4-Methyl-2-pentanone						UJ				
0	2-Hexanone						UJ				
5	*TETRACHLOROETHENE										
5	1,1,2,2-Tetrachloroethane						UJ				
5	*TOLUENE	41		44		109					
5	Chlorobenzene										
5	*ETHYLBENZENE										
5	*STYRENE										
5	*TOTAL XYLENES										
30	Phenol										
30	bis(2-Chloroethyl)ether										
30	2-Chlorophenol										
30	*1,3-DICHLOROBENZENE										
30	*1,4-DICHLOROBENZENE										
30	Benzyl Alcohol										
30	1,2-Dichlorobenzene										
30	2-Methylphenol										
30	bis(2-Chloroisopropyl)ether										
30	4-Methylphenol										
30	N-Nitroso-di-n-propylamine										
30	Hexachloroethane										
30	Nitrobenzene										
30	Isophorone										
30	2-Nitrophenol										

APPENDIX B

PHOTOGRAPHS OF SWMUs
TAKEN DURING SV

EPA REGION III
RCRA RECORDS CENTER

DOC ID # 31924
PAGE # 72

IMAGERY COVER SHEET

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FACILITY NAME Dixon Ticonderoga Co. Deer lake

EPA ID # PAD 041 250 242

REPORT OR DOCUMENT TITLE RCRA Facility Assessment

DATE OF DOCUMENT 6-28-89

DESCRIPTION OF IMAGERY Photographs of SWMUs

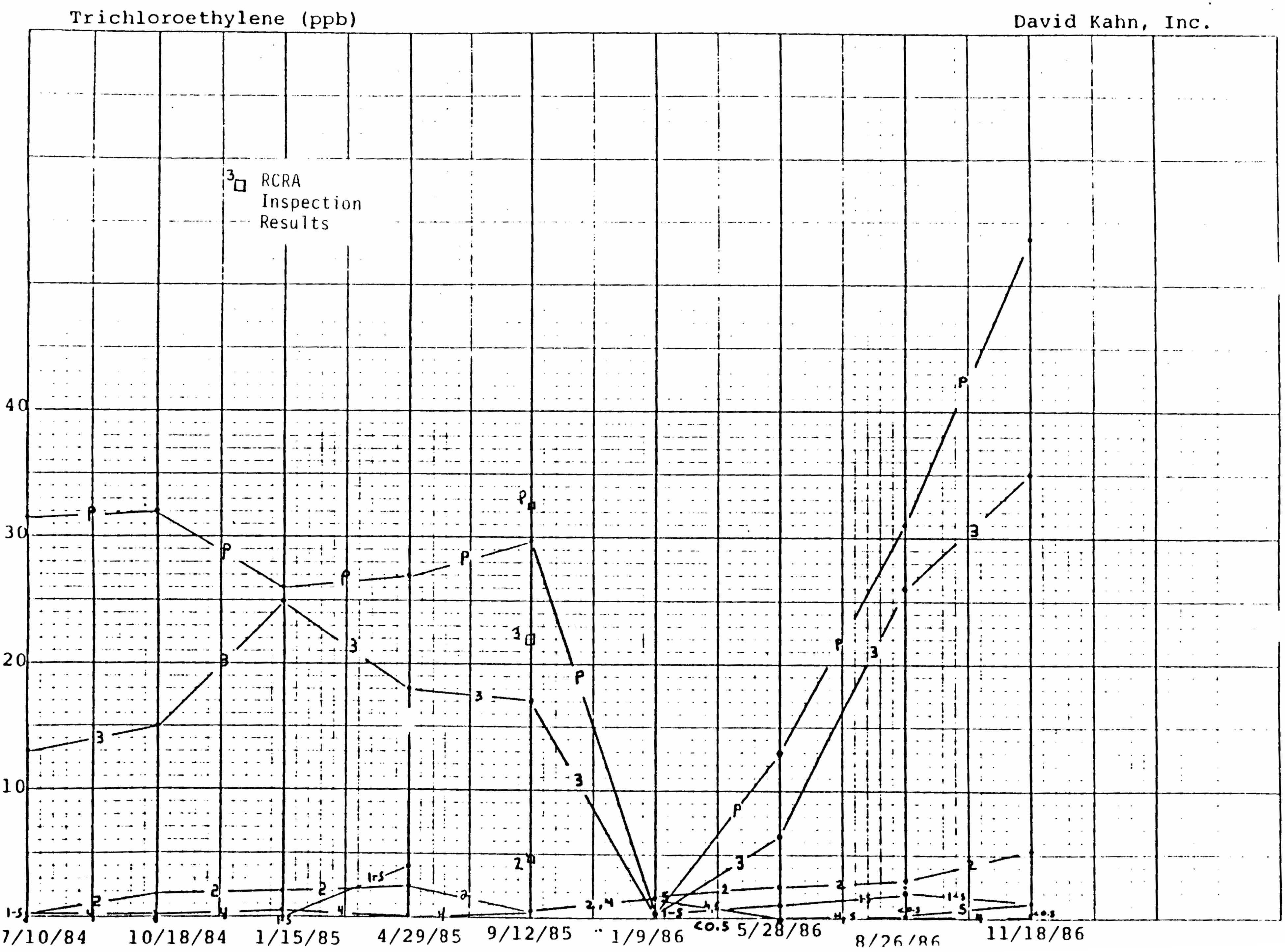
NUMBER AND TYPE OF IMAGERY ITEM(S) 7 Photos

DATE OF IMAGERY 7/8/87

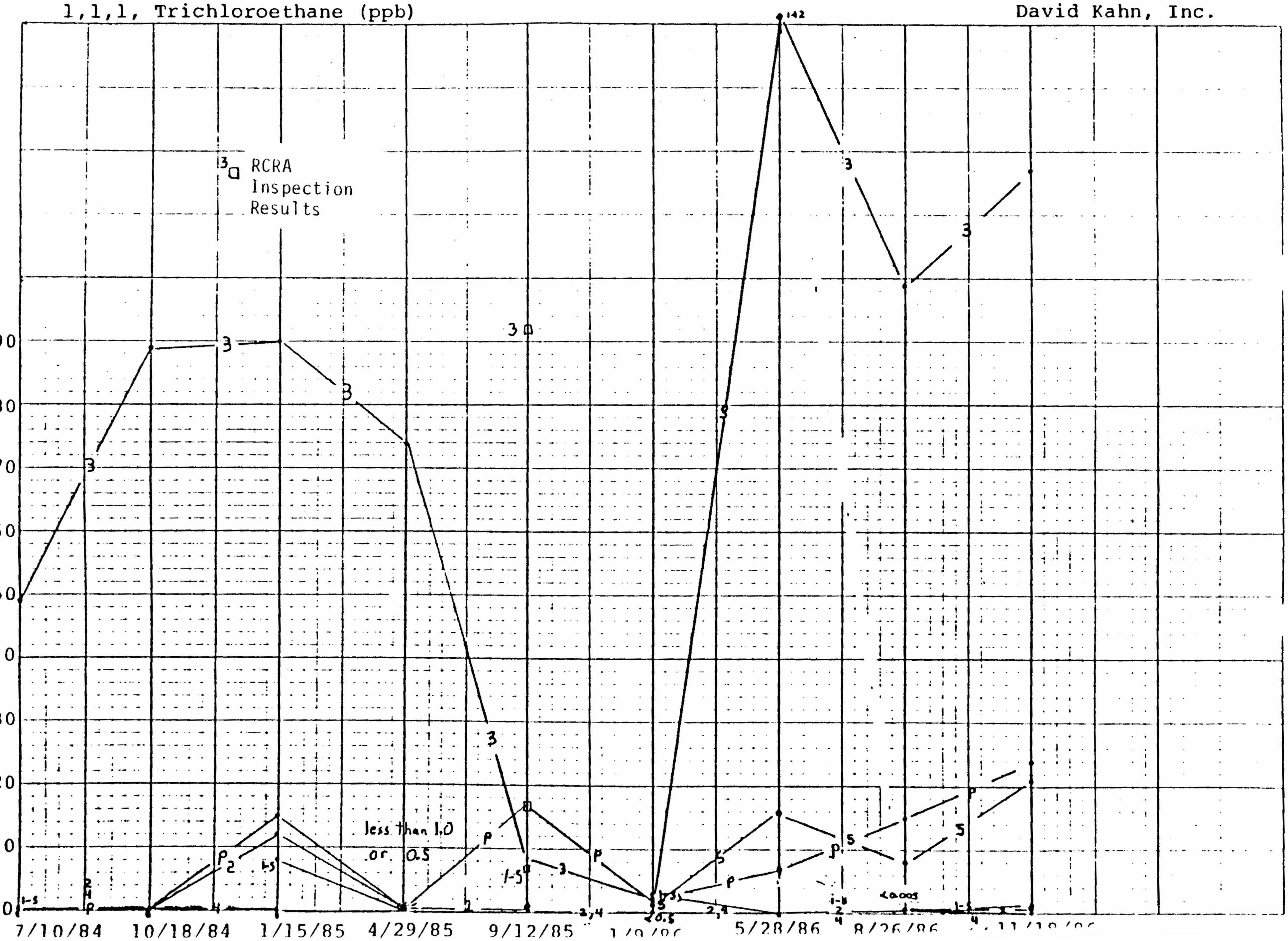
APPENDIX C

ANALYTICAL RESULTS FOR RCRA GROUND-WATER MONITORING 1984-1987

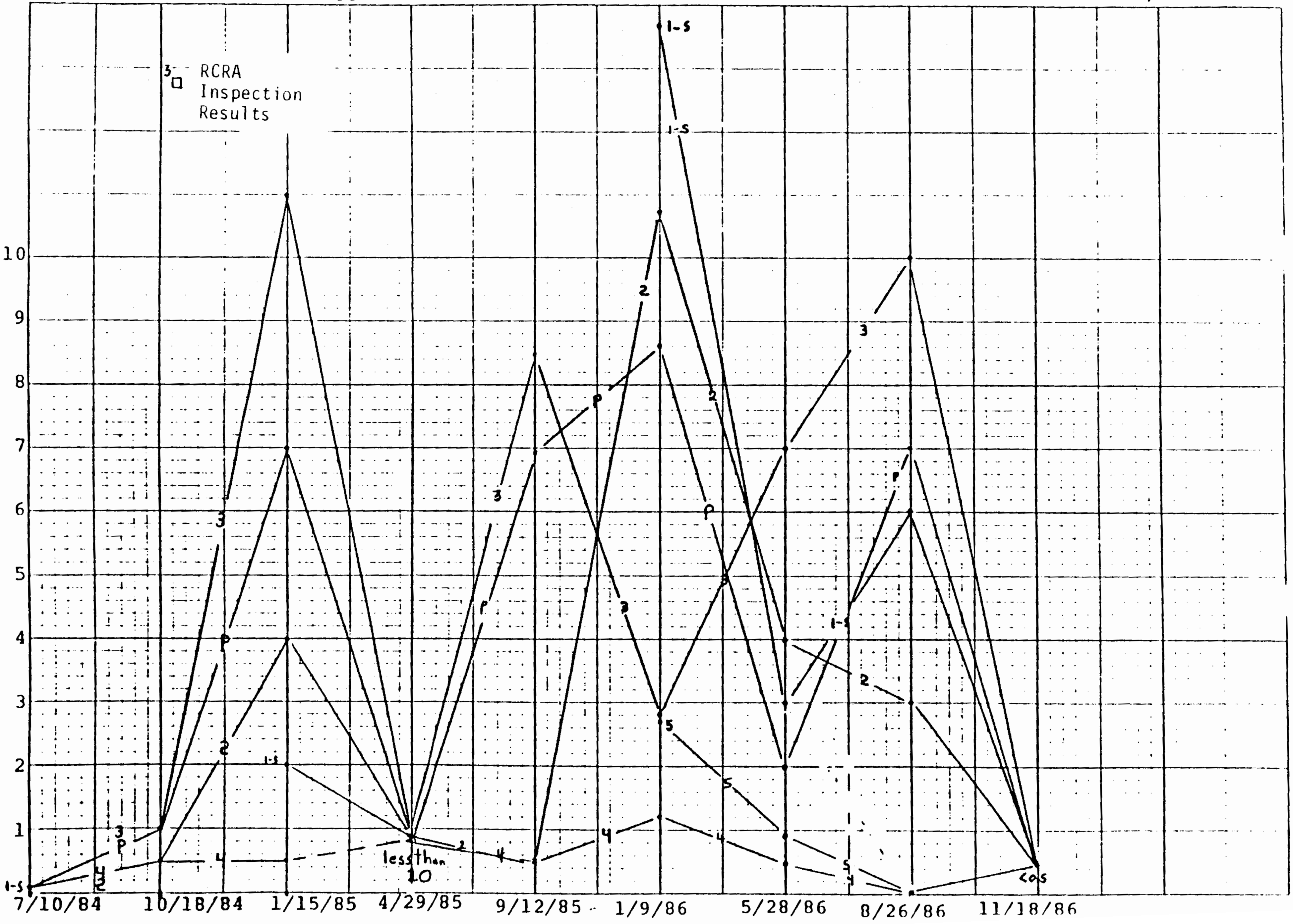
46 0780

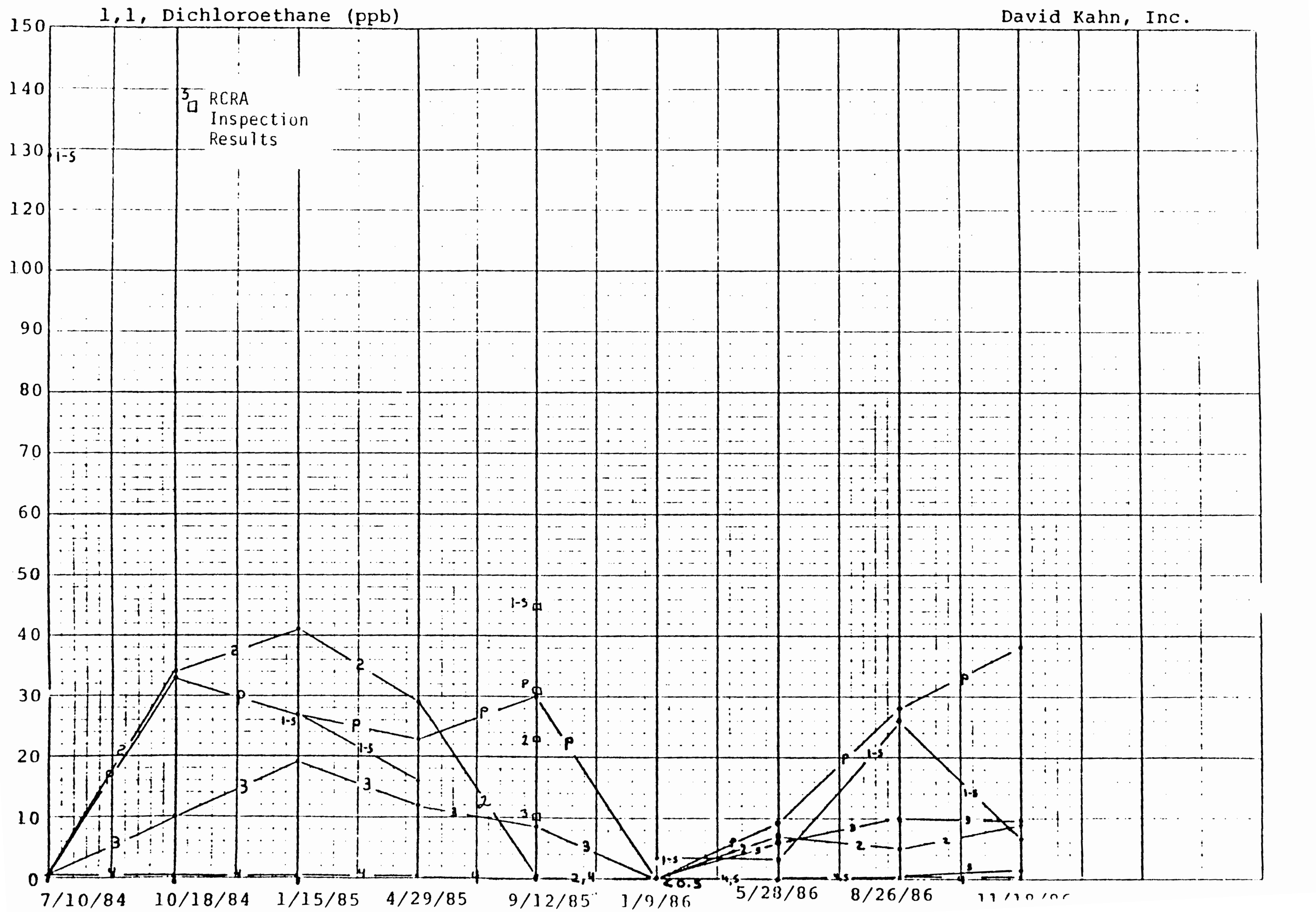


Trichloroethylene (ppb)
David Kahn, Inc.
3 □ RCRA Inspection Results
40
30
20
10
7/10/84
10/18/84
1/15/85
4/29/85
9/12/85
1/9/86
<0.5
5/28/86
8/26/86
11/18/86


1,1,1, Trichloroethane (ppb)
David Kahn, Inc.
RCRA Inspection Results
less than 1.0 or 0.5
142
90
80
70
60
50
40
30
20
10
0
7/10/84
10/18/84
1/15/85
4/29/85
9/12/85
5/28/86

1,2, Dichloroethylene (ppb) David Kahn, Inc.




1,1, Dichloroethane (ppb)
David Kahn, Inc.
RCRA Inspection Results
150
140
130
120
100
90
80
70
60
50
40
30
20
10
0
7/10/84
10/18/84
1/15/85
4/29/85
9/12/85
1/9/86
5/28/86
8/26/86